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Original Articles.

OBSERVATIONS ON THE MECHANICS OF DIGESTION.*

WALTER BRADFORD CANNON, M.D.

INSTRUCTOR IN PHYSIOLOGY, HARVARD MEDICAL SCHOOL.

BOSTON.

The results which are to be presented in outline in this paper have been obtained in researches carried on in 1897-98 and in 1901 in the Laboratory of Physiology of the Harvard Medical School, and they are part of an extensive investigation into the mechanical factors of digestion to be carried on during the next few years. The method thus far pursued has been that of mixing with the food subnitrate of bismuth, a harmless, almost inert, powder, opaque to the *x*-rays, and then with the fluorescent screen observing the changes in the shadows of the alimentary contents as they are worked on by the muscles of the digestive organs. The clearness with which masses of food can be seen is indicated in Figure 1, a radiograph of a cat. Observations have been made chiefly on cats, but many of these observations have been confirmed on dogs, rats and guinea-pigs, as well as on the human subject. The results of the work on the movement of food in the esophagus,[1] on the movements of the stomach[2] and on the movements of the intestines[3] have already appeared. In this paper I shall review briefly some of the results already published on the activities of the stomach and intestines and report certain new observations.

The mechanical factors in digestion perform three functions: the propulsion of the food through the alimentary canal, the mixing of the food with the digestive juices and the exposure of the digested food to the absorbing mucous membrane. These functions are performed in different ways in different parts of the alimentary tract. For the sake of clearness, the methods and results of the activities of the stomach will first be considered, and later those of the large and small intestines.

When the stomach is observed according to the method above mentioned, it is seen to consist of two physiologically distinct parts, divided about half way between the cardia and the beginning of the antrum (Fig. 2). To the left of this division lies the cardiac portion or fundus of the stomach; to the right is the pyloric portion. The distinction between these two portions arises from a difference in muscular activity. Over the food in the pyloric portion waves of constriction are repeatedly passing. These waves start at the beginning of this division of the stomach and pass as deepening contraction rings to the pylorus. In the cat six of these waves pass a given point in a minute, in the white rat, also, about six waves per minute, in the dog between four and five, and in the guinea-pig seven. The fundus is characterized by a total absence of peristalsis; as the food is pressed out of the pyloric portion, however, by the repeated constrictions, the muscles of the fundus slowly contract and squeeze the contents into the more active division. Since the stomach is an organ more devoted to digestion than to absorption, the mechanical processes of mixing the food with the digestive juices and of propelling the food into the intestines are here of first importance.

The efficiency of the gastric peristalsis as a means of mixing the food with the gastric secretions depends on the contraction of the pyloric sphincter. Careful observation reveals that the pylorus does not open for every wave of constriction which approaches it, but only at irregular intervals. So long as the sphincter holds tightly, each ring of constriction as it courses from the middle to the end of the stomach presses the food into a blind pouch; the food, unable to escape through the pyloric opening, has as its only outlet the opening in the advancing ring. Thus each peristaltic constriction in moving toward the pylorus has all the contents of the pyloric portion streaming back through the contracted ring. Beaumont, in his famous researches on Alexis St. Martin, declared that the gastric contents circulated first along the greater curvature from cardia to pylorus, then back along the lesser curvature. He gave, however, very meager evidence to support this statement. Brinton, for theoretical reasons, believed that the food must move forward along the sides of the stomach and backward through the middle. The value of the circulation of the food, as described by these men, lay in the supposition that the food was thus brought near to the secreting gastric wall and that the gastric secretion could thereby more readily exert its action. Observations made with the *x*-rays do not support these theories of mixing currents running throughout the stomach, but nevertheless they show that the pyloric portion is an admirable device for bringing all the food under the influence of the glandular secretions of that region.

Little paste pellets of bismuth subnitrate with starch enough to keep the form may be distinguished from the remainder of the stomach contents by the darker shadows which they cast. Several times I have been fortunate in seeing two of these pellets about a centimeter apart in the axis of the stomach. As a constriction wave ap-

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1. Cannon and Moser: American Journal of Physiology, 1898, I, p. 435.
2. Cannon: Ibid., 1898, I, p. 359.
3. Cannon: Ibid., 1901, VI, p. 251.

proached them, both moved forward, but not so rapidly as the wave. When the constriction overtook the first ball, the ball moved backward through the constricted ring in the direction of least resistance. The wave then overtook the second ball and this also passed backward to join its fellow. At the approach of the next wave they were both pushed forward once more, only to be again forced backward, one at a time, through the narrow orifice. As the waves recurred in their persistent rhythm the balls were seen to be making progress, an oscillating progress, toward the pylorus; for they went forward each time a little farther than they returned. Sometimes twelve minutes elapsed before the balls had advanced to the pylorus from the place where they were first

Fig. 1.—Radiograph of a cat's abdomen, taken 5¾ hours after eating. Spinal column in middle line with pelvis below. On right, above, the pyloric end of stomach; on left, dimly outlined by gas, the ascending colon, and the cecum containing small amount of food. Loops of small intestine containing food in various parts of the abdomen.

affected by the waves; since the waves were running at the rate of six per minute, these little pieces of food were moved back and forth on their way to the pylorus more than seventy times.

The significance of the motions of these food particles is made clear when the conditions attending the formation and passing of a peristaltic wave are considered. As a constriction occurs, the secreting surface enclosed by the narrowed muscular ring is brought close around the food lying within the ring. As this constriction passes on fresh areas of glandular tissue are continuously pressed inward about the narrow orifice; and, furthermore, as this constriction passes on, a thin stream of food is continually forced back through the orifice and thus past the mouths of the glands—a food stream sweeping in one direction past an ever-refreshed mucous surface moving in the opposite direction. The result of this ingenious mechanism is that every part of the secreting surface of the pyloric portion is brought near to every bit of food before the latter leaves the stomach, it may be seventy times or more, as shown by the moving balls.

The propelling function in the stomach is subserved by these same waves of constriction whenever the pylorus relaxes. Relaxation of the pylorus occurs at irregular intervals and is due to factors as yet little understood. Curiously, it allows carbohydrate food, on which the stomach does not act, to pass onward into the intestine much sooner than it releases a proteid food which the stomach can digest. Hard particles, when brought by the peristaltic waves to the pyloric sphincter, act as a mechanical stimulus and greatly prolong the periods of its contraction. Under these circumstances over and

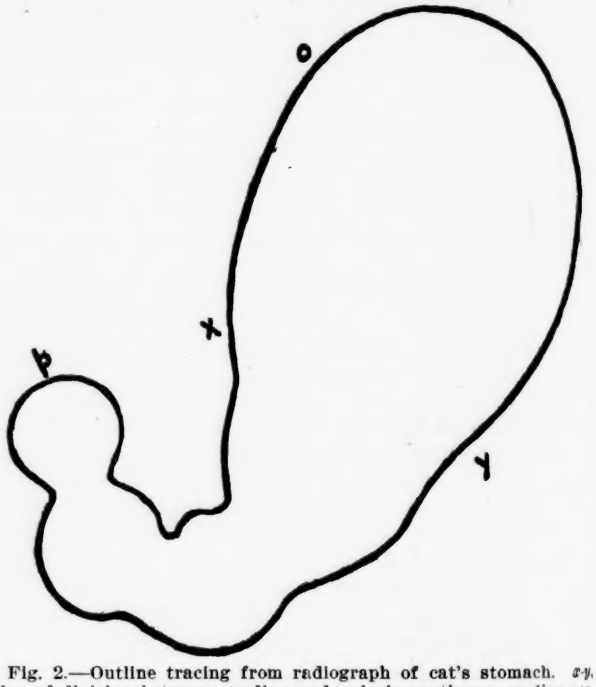


Fig. 2.—Outline tracing from radiograph of cat's stomach. *x-y*, Line of division between cardiac and pyloric portions; cardiac portion, with even contour, pyloric portion with waves of constriction passing to the pylorus (*p*); *o*, position of the esophageal opening.

over again the hard particle is swept up to the pylorus, only to shoot back through the advancing ring of constriction. By this repeated rubbing the peristaltic waves of the stomach serve to break up the more solid parts of the food, a function which the teeth perform with manifestly greater efficiency. It may be that the prevalence of pathologic conditions in the pyloric part of the stomach rather than in the fundus is due to injuries which the greater activity of the pyloric part must bring on itself.

The fundus of the stomach, as stated above, is characterized by a slow tonic constriction of its musculature, which forces its contents into the more active pyloric portion. Pellets of subnitrate of bismuth in this part of the stomach contents retain their relative positions for an hour or more after the food is ingested. In 1898 I presented evidence that the absence of mixing currents in the fundus results in the food there retaining its original reaction for a considerable period, so that salivary digestion may readily take place in that part of the stomach without interference by the acid gastric secre-

tion. These results have recently been confirmed by Heyde[4] working in Grützner's laboratory in Tübingen.

The value of the stomach as a place for holding the bulk of the food and serving it out a little at a time so that the intestines may not become congested during their digestive and absorptive processes has been pointed out by Moritz. All the advantages secured thus to the intestines may be claimed also for the stomach itself, for, as has been shown, the active portion of the stomach is the pyloric portion, and the fundus serves as its reservoir—an active reservoir pressing out its contents a little at a time as the pyloric peristaltic mechanism is ready to receive them.

Fig. 3.—Radiograph showing region of persistent rings of contraction (descending colon), and region of antiperistalsis (cecum, ascending and transverse colon). The slight indentation above the cecum marks the position of the ileocolic valve.

I have described in detail the effects of peristaltic waves in bringing the food into intimate contact with the mucous surface of the stomach, because the action is similar to that in the cecum and in the ascending and transverse colon, where the normal activity is an antiperistalsis. Constriction waves start in the transverse colon and pass backward toward the cecum. These waves, unlike those of the stomach, do not run in continuous rhythm; they occur usually in periods lasting about five minutes and recur every fifteen or twenty minutes.

The antiperistalsis in this part of the large intestine seems indeed to give a reason for the presence of a valvular structure at the entrance of the small intestine into the large. Hundreds of antiperistaltic waves have been seen coursing toward the cecum, and only twice has food been observed to be pressed back into the ileum through the ileocolic valve. Inasmuch as the valve is competent for the food which has gone from the small into the large intestine, the antiperistaltic waves have the same effect here as the peristaltic waves have in the stomach when the pylorus remains closed. For, when a constriction occurs, some of the mucous surface of the colon becomes enclosed by the narrowed muscular ring; and, as this constriction passes on, fresh areas of this surface are continually pressed inward around the narrow orifice, while a thin stream of food is passing by it in the opposite direction. As waves recur about five times a minute, twenty-five waves or more affect every particle of food in the cecum and in the ascending colon in this churning manner during each normal period of antiperistalsis. The result must be again a thorough mixing of the contents with the digestive secretions brought from the small intestine and an exposure of the digested food to the absorbing wall.

Immediately after food passes from the ileum into the large intestine a strong tonic contraction of the cecum and the ascending colon is commonly observed, which serves to press onward toward the rectum the contents of these parts. Antiperistaltic waves follow at once the general contraction, so that much of the food which has been pressed onward is returned into the cecum. With the repetition of this process, however, more and more material appears at the end of the transverse colon, and on its appearance there a persistent ring of contraction cuts it off from the region of antiperistalsis; as still more food appears in the large intestine this ring moves slowly onward toward the rectum, pressing a mass before it, and is followed by other similar rings carrying onward similar masses by very slow peristalsis (Fig. 3).

Thus, in the large intestine the function of mixing the food with the digestive secretions and of exposing this food to the absorbing walls is performed by an antiperistalsis at the beginning of the large intestine. It is here that the last valuable constituents of the food are worked over and taken into the body. The remnant of unused material is propelled onward by occasional strong contractions of the whole region of antiperistalsis. These contractions squeeze the material toward the end of the transverse colon where slowly-moving peristaltic waves force it to the rectum.

The manner in which the food is mixed with the digestive secretions, exposed to the absorbing wall, and carried forward in the small intestine is considerably different from the processes observed in the large intestine and in the stomach. To the admirable process by which these functions are performed in the small intestine I have given the name "rhythmic segmentation." This activity of the muscular wall is first seen in the duodenum when a mass of food has accumulated there after repeated relaxations of the pylorus. The mass of food is observed at first to be wholly quiet (Fig. 4). Suddenly irregular movements take place about it, and then at regular intervals along its length constrictions of the circular musculature separate the mass into a number of segments of equal size. Hardly have the constrictions thus taken place when similar constrictions begin to appear

4. Grützner: Deutsche Medizinal-Zeitung, 1902, No. 28.

about the middle of each segment. As these new constrictions deepen, the first constrictions begin to relax. Finally, when the new constrictions have completely divided the segments, the first constrictions have entirely relaxed and the neighboring halves of the divided segments unite to form new segments in the region of the first constriction. Now these new segments are again divided by circular constrictions about their middle, and neighboring halves of these divided segments unite to make a third series, and so on. This process of rhythmic segmentation of the food may go on for several minutes in the duodenum (at the rate of thirty divisions per minute in the cat) so that the food, coming from the stomach, becomes thoroughly mixed with the outpouring secretions of the liver and the pancreas. It is usual for the process to be brought to an abrupt end in the duodenum by active peristalsis. A peristaltic wave forms behind the mass of food and sweeps it swiftly forward through several coils of the intestine.

When an animal has received a meal of bread and milk or salmon the characteristic appearance of the alimentary organs is as follows: over the pyloric end of the stomach constriction waves are continually passing.

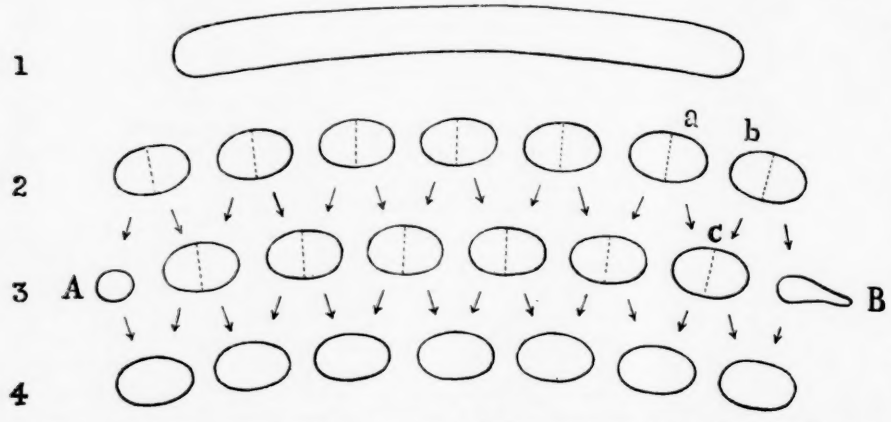


Fig. 4.—Diagram representing the process of rhythmic segmentation of the contents of the small intestine. Constrictions cut the mass into a series of uniform ovoid segments; a moment later each segment is divided into two parts, and immediately after the division neighboring parts, as *a* and *b*, line 2, rush together and merge to form new segments, as *c*. The next moment these new segments are divided to form a third series, and so on for a thousand times or more.

Along the cecum and the ascending colon an occasional series of antiperistaltic waves is to be seen, and in the small intestine a mass of food here and there is undergoing rhythmic kneading. The quiescence of the food in the intestines is in marked contrast to the continuous churning which it is receiving in the stomach. The food lies in scattered, long, slender masses in the ileum; only a few of these masses show any signs of muscular activity affecting them. When segmentation begins on one of these masses it follows the same course as that described for the duodenum. The only variations from this type are divisions of the segments into thirds instead of halves when the masses are large, or a division into two parts and the subdivision of each part before the mass is united again to undergo a repetition of the process. In the cat, as already stated, segmentation of the food occurs about thirty times in a minute. These constrictions may continue for half or three-quarters of an hour without moving the food perceptibly along the canal. The food is thus divided and redivided over and over again a thousand times or more with no advance. This same operation has been observed in the dog at the rate of from 18 to 22 segmentations per minute and in the white rat at the rate of about 44 to 48 segmentations per minute—a most remarkable activity for smooth muscle.

The result of the process of rhythmic segmentation must be a thorough mixing of the food with the digestive secretions brought from the stomach and the duodenum and with the secretions of the intestine itself, and a thorough exposure of the digested food to the absorbing walls—since, with each constriction, the absorbing mucous membrane is plunged directly into the midst of the little masses of food. Not only are the processes of digestion and absorption favored by these movements, for Mall has shown that contraction of the intestinal wall has the effect of forcing the venous blood from the submucous plexus into the radicles of the superior mesenteric vein, and has noted that it must have a similar effect on the flow of the lymph. Thus by this single mechanism of segmentation the food and digestive fluids are churned together, the absorbing mucosa is brought in most intimate contact with the digested food, and the blood and lymph, carrying the absorbed material, are sent away through veins and lacteals.

A review of the activities of the small intestine shows that the functions of mixing the food with the digestive juices and exposing the food to the absorbing structures is performed by the process of rhythmic segmentation. The function of propelling the food along the canal may also be performed to a very slight extent by this same process; it is performed typically, however, by the well-known peristaltic wave which has so long been regarded as the chief activity of the intestinal muscles.

There are two matters of practical importance which remain to be mentioned: the effect of antiperistalsis of the colon on rectal injections, and the effect of emotional states on the activities of the alimentary canal. About eight years ago Grützner[5] reported observations which indicated that materials injected into the rectum might be carried back into the small intestine even as far as the stomach. Since that time some observers have confirmed Grützner's results; others, failing to confirm them, have affirmed that such results were due to carelessly allowing the test materials to become mixed with the food which the animal took normally by mouth. The presence of antiperistalsis in the colon led me to believe that there exists here an activity which would fully account for Grützner's results. Accordingly, I injected into the large intestine enemata of different amounts and of different consistencies. The experiments showed that, when a small amount of the nutrient material was introduced, it lay first in the descending colon. In every instance antiperistaltic waves were set going by the injected mass and the material was thereby carried in considerable amount to the cecum. Never in my experience have these small enemata been carried back through the ileocolic valve. When large injections are given, i. e., amounts nearly filling the colon and cecum, the antiperistaltic waves are effective in forcing the food from the large intestine into the ileum. The ileocolic valve,

5. Grützner: Deutsche medicinische Wochenschrift, 1894, xx, p. 897.

which is competent for food coming normally from the small intestine into the large, is curiously incompetent for this injected substance, even when the substance is of the consistency of thick cream. Radiographs taken at intervals after the injection show that, as time passes, the antiperistaltic waves almost completely empty the transverse and ascending portions of the colon and that the small intestine gradually receives more and more food. After a short time the typical segmenting movements can be seen in the loops, busily separating the food into small masses and again and again dividing and redividing them. It is evident that as far as the mechanical activities of the small intestine are concerned this portion of the alimentary canal is bipolar. Food material may enter it at either end; injected food and the nutriment which has come through the stomach in the normal manner are exposed to the same mixing and absorbing activities.

Observations on the stomach of the cat, made in 1898, showed that the peristalsis is stopped whenever the animal manifests signs of anxiety, rage or distress. The extrinsic innervation of a large part of the intestinal tract is the same as that of the stomach, and it is of interest to note that emotional states have the same effect on the movements of the intestines as they have on the movements of the stomach. Any signs of emotion, such as violent rage or even the restlessness and continued whining which indicate anxiety and distress, are accompanied by a total cessation of the segmenting movements in the small intestine and the antiperistalsis of the colon, as well as the total quiescence of the gastric mechanism.

DISCUSSION.

DR. A. C. CROFTAN, Chicago—To what extent did the presence of bismuth in large quantities influence these movements? I believe that some investigators deny the existence of antiperistaltic movements. I would like to ask if bismuth, which would act as a foreign body in the intestine, would modify the intestinal movements?

DR. J. E. O'BRIEN, Scranton, Pa.—I have thought for a long time that many cases of appendicitis were due to loading of the cecum, and this brilliant illustration of the antiperistaltic movements of the ascending colon should shed some light on the subject. Some cases of appendicitis, I believe, begin as congestion of the cecum and extend to the appendix.

DR. W. B. CANNON, Boston—As regards the antiperistalsis of the colon, the animals on which these experiments were performed were kept without food for a day, and I have no means of knowing what takes place except in the food containing bismuth. When food enters the colon, antiperistaltic waves may be seen coursing along the food. This may continue for about five minutes, then there will be an interval of fifteen minutes—the antiperistalsis has been seen starting from the first of the constrictions which you see in one of these photographs of the large intestine. These waves start from the end of the food as it is gradually accumulating in the cecum or the first of the tonic constrictions which occur after the food has come to the further end of the transverse colon. Nothnagel has denied antiperistalsis, but his investigations have only referred to the small intestines, and I agree with him to this extent. In the large intestine, however, there is no doubt that it takes place, for I have seen it in animals whose abdomens have been opened under salt solution. I have also seen it in the dog, and think it probably bears a relation to animals having large ceca. The bismuth does not seem to have any effect on these waves, but this is a critical matter, on which I am working at the present time. I intend adding to the food other substances which are not readily soluble, and which have a sufficient molecular weight to cast a shadow on fluoroscopic examinations.

THE CLINICAL MANIFESTATIONS OF HYDROPHOBIA.*

D. J. McCARTHY, M.D., AND M. P. RAVENEL, M.D.
From the William Pepper Clinical Laboratory (Phoebe A. Hearst Foundation), and the Laboratory of the Pennsylvania Live Stock Sanitary Board.
PHILADELPHIA.

The usual text-book descriptions of hydrophobia give a clinical course of the disease divided into three stages. It is, however, difficult in practice to separate the clinical manifestations by any fixed rule.

The incubation period is usually about six weeks. In both the cases reported in this paper it was about that length. The onset of the disease is marked by several days of malaise, with slight fever, anxiety and, in a large number of cases, irritation at the seat of the infecting wound. The temperature at this stage is usually elevated one or two degrees, although it may remain at normal. This stage of irritation soon passes over to the convulsive stage. In some cases there is no convulsion or spasm, and the premonitory stage is followed by the paralytic symptoms. The symptoms of the second stage begin with more or less difficulty in the act of swallowing. Anything that excites the swallowing reflex mechanism causes an overflow spasm to the glottis, the muscles of the neck and sometimes to the jaw muscles. As the disease progresses the local spasm is replaced by a general convulsion. The mental state is one of increasing anxiety, both as to the outcome and as to other conditions, until a maniacal condition supervenes, or much more frequently the mental state of a hallucinatory delirium.

The patient may die in the convulsive stage from exhaustion and heart failure or a paralytic group of symptoms supervenes. This so-called paralytic stage may occur in cases where there is very little spasm of the muscles. In these cases it is spoken of as dumb or paralytic rabies. The paralysis is usually one beginning in the lower extremities and later affecting the other extremities. In the delirium there may be passing of the urine and stools in the bed. Some authors include among the paralytic group of symptoms the evidence of cardiac and respiratory failure.

ILLUSTRATIVE CASES.

The following two cases give a picture of the disease as it is met in private and hospital practice.

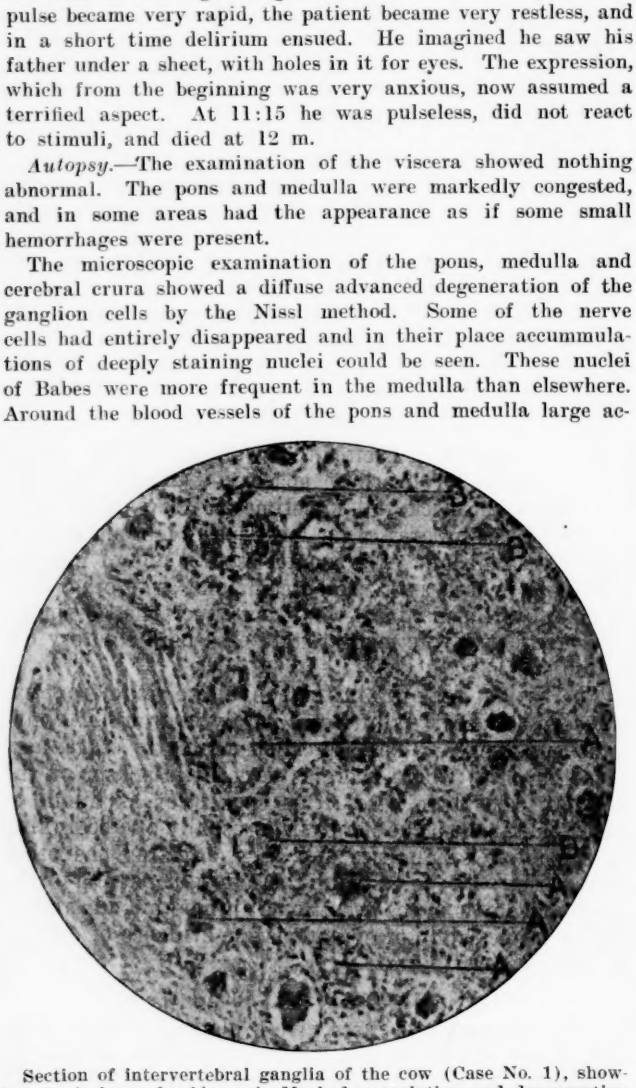
CASE 1.—W. M., male, aged 5, had been perfectly well up to May 13, 1901. At that time he was bitten on the cheek by a stray dog. The wound healed and he appeared to be in good health until Saturday, June 15. During that night he cried during his sleep. The following day he was up and about, but did not appear to be well. He ate very little during the day. Citrate of potassium was administered by the mother; free purgation resulted. Sunday evening he did not appear to be able to drink, as he asked for water and then told them to take it away after attempting to drink it. Monday he was admitted to St. Joseph's Hospital, with a temperature of 101. He was very much frightened, according to notes of the case, evidently the irritative stage of the disease. He was tested as to his ability to drink, and every time he attempted to swallow there resulted a spasm of the glottis and the muscles of the neck and face. He refused to repeat the first attempt. After reassuring him, he again attempted to swallow a mouthful of water, but it came out through the nose by the spasm of the neck, throat and face muscles as in the first attempt. Later the nurse succeeded in getting him to swallow a portion of an apple. In attempt-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, Winfield S. Hall and Frank B. Wynn.

ing to wash him, he became nervous when his face was washed, but was still very nervous from the tests at swallowing. At 7:30 p. m. he succeeded, with much difficulty and after much persuading, in drinking 6 ounces of weak coffee. Marked spasms occurred with each mouthful of the fluid swallowed. Shortly after this general tonic convulsions ensued, the contractions of the legs being most marked. At 11 p. m. the pulse became very rapid, the patient became very restless, and in a short time delirium ensued. He imagined he saw his father under a sheet, with holes in it for eyes. The expression, which from the beginning was very anxious, now assumed a terrified aspect. At 11:15 he was pulseless, did not react to stimuli, and died at 12 m.

Autopsy.—The examination of the viscera showed nothing abnormal. The pons and medulla were markedly congested, and in some areas had the appearance as if some small hemorrhages were present.

The microscopic examination of the pons, medulla and cerebral crura showed a diffuse advanced degeneration of the ganglion cells by the Nissl method. Some of the nerve cells had entirely disappeared and in their place accummulations of deeply staining nuclei could be seen. These nuclei of Babes were more frequent in the medulla than elsewhere. Around the blood vessels of the pons and medulla large ac-



Section of intervertebral ganglia of the cow (Case No. 1), showing the lesions of rabies. A. Marked vacuolation and degeneration of ganglion cells. B. Advanced capsular proliferation filling up the ganglion cell capsule with the proliferated capsule cells.

cumulations of these same nuclei were present. Capillary hemorrhages were found in the upper portion of the medulla, or under the floor of the fourth ventricle.

The intervertebral ganglia showed marked changes. The cells were in a state of advanced diffuse chromatolysis. The capsules of all the cells showed more or less cell proliferation. Some of the capsules were entirely filled with the proliferated capsular cells. The peripheral nerves showed no degeneration.

This case is of special interest on account of its fulminating character. The patient was only sick three days. In reality only one day intervened between the development of the irritative group of symptoms and the boy's death. There were no paralytic symptoms noted. The intensity of the bulbar lesions could easily account for the rapid course of the disease. The perivascular lesions were in their extent and character more like those observed in the lower animals than those of the human being, where all the lesions, as a rule, are less in degree.

We take this opportunity of putting the following case on record:

CASE 2.—The patient was a girl, 8 years of age, who came under the care of Dr. Frederick Krauss on Aug. 12, 1900, by whom diagnosis of rabies was made, and to whom we are indebted for the history. Six weeks before, the child had been bitten on the right ear by a stray dog which she was petting because it seemed to be sick. The dog was put out of the house and lost sight of. The wound was cauterized with nitrate of silver by a druggist, and healed without suppuration. On August 11 the child complained of lassitude, but was restless, and on account of these symptoms her mother gave her a dose of castor oil. The next morning inability to swallow was observed, being attributed to "sore throat," and soon after her mother noticed that, on being touched with a wet towel or exposed to slight draughts of air, she was frightened and startled. Dr. Krauss was called in on this day. The temperature was 100, pulse 120. On giving her a glass of water, she would look at it with dilated pupils for a moment, then suddenly grasp it and quickly attempt to swallow a mouthful. Every trial was followed by severe tonic convulsive contraction of the pharyngeal constrictors and the more external muscles of the neck, lasting about fifteen seconds. Repeated attempts were made, always with the same result. In reply to a question, she said that she was not afraid of the water, but it hurt her throat very much when she swallowed it. She shrank from the slightest current of air. Large doses of bromid of potassium and chloral with morphin were given, but without effect, and the symptoms grew more marked. She passed a sleepless night. On the morning of the thirteenth her temperature was 101.5, pulse rapid. Later in the day she developed a state of intense excitement. She would lie quiet and apparently conscious for a time, then without warning suddenly spring up to her mother, crouch down with short cries of fear, looking at the wall with an expression of great dread, and seemingly unconscious of her surroundings. After about two minutes she would wake as from a dream. Repeated hypodermic injections of morphin had no effect, and she was sent to St. Christopher's Hospital. After a short remission the convulsive seizures became so frequent that almost constant inhalation of chloroform became necessary. When this was left off, she would utter short and loud cries of fear, which might well have been mistaken for the bark of a dog, and attempt to spring out of the bed. Death took place on the morning of the fourteenth, at 6 o'clock.

Autopsy.—The examination revealed congestion of the brain and meninges and minute hemorrhages, while the severity of the convulsions was proven by rupture of the pleura. The train of symptoms left no doubt in the mind of the attending physician that the case was one of hydrophobia, and the diagnosis has been abundantly confirmed by the inoculation of rabbits, as well as by microscopic examination of the bulb and plexiform ganglia of these animals. The inoculations were carried through four generations, the rabbits all dying with typical symptoms of rabies, with the exception of one of the first generation, which died thirty-six hours after inoculation from septicemia. Besides the microscopic examination mentioned, full series of cultures were made, with the object of detecting any accidental infection during inoculation or after. These cultures remained sterile in every instance, so that we are able to exclude with certainty any known bacterial disease.

The clinical and microscopic evidences so far presented in connection with hydrophobia (human being) gives us as much right to regard it as a distinct clinical entity with a distinctive pathology as we have to regard syphilis or tuberculosis as distinct diseases.

EXAMINATION OF ANIMALS WITH RABIES.

We have had submitted to us for examination 105 animals suspected or known to be rabid, including 28 cases reported to the Pathological Society of Philadelphia Jan. 10, 1901. Of these 75 were dogs, 11 cows, 2 horses, 2 cats and 15 rabbits (experimental).

One of the cows and all of the rabbits were experimentally infected. In 83 cases the clinical symptoms

and history were positive of rabies. Many of the dogs were sent to the Veterinary Hospital of the University of Pennsylvania and were under observation from one to three days before death. Forty cases were controlled by the inoculation of rabbits, a few being carried through four generations. In 60 both the medulla and the intervertebral ganglia were examined. In 36 cases only the ganglia were examined, in 7 cases only the medulla. In 2 cases neither could be examined.

In only two cases have we failed to find the lesion of Babes in the medulla when the changes in the ganglia were marked, but in several the bulbar lesion was slight. The vascular tubercle of Babes is much more often found than the one having the nerve cells as a starting point. While the vascular tubercle is frequently found accompanied by very slight changes in or about the nerve cells, we have not seen a case in which the reverse was true.

Of the 75 dogs examined 22 were killed and 53 died. In 44 the type of the disease was furious; in 9 paralytic and in 22 mixed or not reported. We have examined those animals which were killed with especial interest, since in practice we are asked to give a rapid diagnosis in a large number of such cases. The studies of Cuillee and Vallee in France have shown that in dogs experimentally inoculated, then killed at various times after symptoms of rabies have appeared, the changes in the ganglia may not be found, hence the advice is given to allow the disease to run its course, ending in death. Of the 22 dogs which were killed, in 7 we could give no opinion. In 3 of the 7 both the medulla and ganglia were examined. The importance of allowing the animal to die is manifest from this, since in at least one-third of the cases where the animal is killed prematurely no diagnosis can be made except by inoculation with the attendant delay.

The value of the microscopic method is shown in the fact that in 87 of our 105 cases we were able to give a prompt diagnosis by examination of the ganglia alone, and in 94 by the ganglia or medulla.

In view of the fact that changes in the ganglia somewhat similar to those found in rabies have been described in other processes—endothelioma (Speller), diphtheria (Crocq), chronic alcoholism (Burr and McCarthy), forage poisoning (McCarthy and Ravenel)—the clinical history should always be taken into consideration in making the diagnosis. We know of no acute disease in dogs presenting the proliferation of the capsular cells and the tubercle of Babes, and would consider them as diagnostic of rabies in conjunction with a history of an acute clinical course of the disease.

DISCUSSION

ON THE PAPER OF DRS. M'CARTHY AND RAVENEL.

DR. LOUIS C. AGER, Brooklyn—I had a case in the winter, a man bitten by a dog supposed to be mad. The dog was sent to the Pasteur Institute and the diagnosis of hydrophobia confirmed. After treatment at the institute the man came home, on a Friday, and on the following Sunday he was taken sick with nervous symptoms and finally developed a double facial paralysis. Sensation was not affected. He finally recovered, and is now a well man. I have always been curious to know whether this was due to the treatment.

DR. LEO LOEB, Chicago—Lesions have been found in other diseases similar to the ones described in rabies. To judge from our experience with other toxins we would not expect a certain histologic change to be absolutely characteristic for the action of one poison. But for practical purposes, if all circumstances are taken into account, this method seems to be sufficient.

DR. M. P. RAVENEL, Philadelphia—Among our control cases have been a considerable number of animals which had been used in testing diphtheria and tetanus antitoxins. Many of these animals had lived for a considerable time after showing the symptoms characteristic of the poisons. Animals poisoned by diphtheria toxin were selected because Crocq has found in one case of membranous croup in a child changes similar to those described by Van Gehuchten and Nélis. In none of the animals examined did we find any lesions at all like those seen in rabies. We have also examined a number of cases of distemper in dogs, a disease in which there is often a slow paralysis of the hinder extremities, and several cases of chorea, also in dogs. In none of these have we found similar changes. While we do not hold that these lesions are pathognomonic of rabies, we feel assured that, taken in connection with the clinical history, they are absolutely diagnostic.

In man some four cases have been reported in which changes similar to these have been found, but none of them could possibly have been mistaken for rabies. In the lower animals, in spite of the large number of examinations made by others, as well as by ourselves, I know of but two instances in which changes which could have been mistaken for those of rabies have been found. Both of these were in animals which died of forage poisoning; one a calf, in which the changes were very slight, and the other a horse, which showed well-marked lesions. The lesion is, however, not at all constant in this disease, for we have found it only twice, though many cases have been examined.

As far as dogs go—and this is the animal in which we are most interested in this connection—we have yet to meet with the first case in which there is the slightest reason to suspect that the microscopic findings have led us astray. The experience of two years, amounting to 105 cases, controlled by a large proportion of inoculations, as well as the study of clinical histories and the examination of animals dead of various other diseases, has convinced us of the great diagnostic value of the gangliar lesion discovered by Van Gehuchten and Nélis.

DR. W. BECKER, Milwaukee, Wis.—Three months ago I performed an autopsy of this kind and made an examination of the spinal cord and ganglia. The only change I noted in the spinal ganglia was a slight tendency toward washing away of the border of the nucleus, and the nucleolus was not as distinct as in normal spinal ganglia. Nessl's bodies were not much affected except the outlines, which were a little indistinct. All I found was a hyperemia, which is hard to diagnose in the spinal cord, this hyperemia extending upward from the dorsal region to the beginning of the cervical enlargement. There was little cellular proliferation around the blood vessels. The changes were not identical with the specimens shown here. I have performed many experiments with diphtheria toxin, and have gotten results similar to those obtained with tetanus toxin, and in neither of these cases was there anything characteristic of the lesions shown here.

DR. E. R. LECOUNT, Chicago—How long would it be safe to let dogs live when you wish to make a diagnosis of rabies? Are there any cases of dogs recovering? I would remind the section that last year at St. Paul Dr. Ohlmacher showed some beautiful specimens illustrating the processes described.

DR. M. P. RAVENEL, Philadelphia—I have never seen a dog live more than three days after the diagnosis is wished for, and usually the time is not so long, so that we can afford to let the dog die of the disease. I have sometimes allowed persons to kill a dog in the last stages of the disease after the paralysis was well marked, and had no trouble in making the diagnosis thereby. There are on record only three or four cases of recovery from rabies in the lower animals. It is an extremely rare thing. If a dog is killed prematurely we may fail to find the characteristic lesions of rabies, and yet we can not exclude rabies, since sufficient time for the production of the changes was not allowed. In such a case it is impossible to say whether the dog was mad or not. The great point is that when these lesions are found we can say with absolute confidence that the dog was rabid, but their absence in a dog killed prematurely does not justify us in saying that the animal was not rabid. In all cases it is well to allow the dog to die of the disease when a rapid diagnosis is demanded.

DR. D. J. MCCARTHY, Philadelphia—In reference to the case which suffered with nervous symptoms and took the Pasteur treatment, I have nothing to offer. I should suppose that it was due to the antitoxin or the treatment itself, but I confess that in a case like this I would not like to offer a positive opinion. As to the matter of these lesions occurring in other conditions, I merely did the microscopic work relative to the neuropathology. But I can say that we have never come across lesions in the intervertebral ganglia in other conditions exactly similar to those of hydrophobia. I reported a case of multiple neuritis with Dr. Burr, in which these capsule cells had proliferated and there was a multiple neuritis, but the lesions were not the same and were without round cell infiltration. The grouping of the cells was in the interstitial tissue rather than in the capsule itself. From *a priori* reasoning we expected to find these lesions in other acute conditions, but as yet we have not found them, except in the isolated cases of epidemic forage poisoning in horses and in the case of diphtheria reported by Crocq.

THE PLANTAR REFLEX IN EPILEPSY, WITH SPECIAL REFERENCE TO THE BABINSKI PHENOMENON.*

J. M. KENISTON, M.D.
MIDDLETOWN, CONN.

There is a wide diversity of opinion among writers and observers as to the nature and variety of the reflexes in epilepsy with brief, if any, allusion to the plantar reflex, which apparently either escaped observation or was not recorded until within a comparatively recent period. I find no reference to the subject by Gray or Dercum. Dana[1] says: "Immediately after the attack there is a temporary exhaustive paralysis with loss of knee-jerk." Hare[2] says: "Reflexes are decreased or lost in epilepsy immediately after an attack." Osler[3] states that "after the attack the reflexes are sometimes absent; more frequently they are increased and the ankle clonus can generally be obtained." Strümpell[4] says: "The cutaneous reflexes are still suspended directly after an attack; but the tendon reflexes are generally somewhat exaggerated, although sometimes they are diminished or absent."

Gowers[5] states that "for a few seconds after a severe fit reflex action in the limbs remains absent. Tickling the sole no longer causes a movement of the leg, and the loss may involve the muscle-reflex action, so that the knee-jerk can no longer be obtained, as Westphal first showed. But this stage of loss is succeeded by temporary increase of myotatic irritability, so that the knee-jerk is excessive and the foot clonus may be obtained. In most cases this increase is alone to be detected. It may be present only on the side on which the convulsion was most severe, i. e., on the side toward which the head is turned. It lasts a few minutes and then passes away. These phenomena are probably the result of temporary exhaustion of the centers concerned—of the muscle-reflex center in the case of loss; of the controlling structures (the terminations of the pyramidal fibers) in the case of excess." Bevan Lewis[6] says that "certain seizures are invariably followed by exalted knee-jerk and well-marked ankle clonus, the latter immediately succeeding or following a few minutes after the fit. In contrast there are instances where the knee-jerk is completely lost after a severe fit, reappearing slowly in the course of four or five minutes." He does not mention the plantar reflex.

Collier[7] in 40 epileptics found the extensor reflex present in 38 cases and absent in 2 cases. After every fit of severe convulsions, lasting any length of time, the extensor response was found and lasted for some time. In a patient who had fourteen severe fits in forty hours the extensor response was always present, persisting for seven hours after the last attack, when the flexor response returned. Walton and Paul[8] found the plantar reflex absent in 7 out of 18 cases tested. Eskridge[9] in 100 cases of epilepsy found the "plantar reflex present in 93 and absent in 7. In 21 cases subsequently observed the flexor response was present in 18 cases and irregular in 3. In reply to a letter of inquiry in regard to the "irregular" response, Dr. Eskridge writes:* "The irregularity consisted in the plantar reflex being neither distinct extension nor flexion. In neither was there a distinct extensor reflex, or Babinski sign, but there was a flexion of the outer toe generally, and in some, one or two, the smaller toes only would flex. The cases were not observed directly after a seizure, but during the interval, when the patient had resumed his normal condition. I have not had an opportunity since I have been observing the plantar reflex to investigate for the presence or absence of the Babinski sign immediately after the convulsions. In most cases of epilepsy where plantar reflex has been present it has been flexion in character; in many cases of epilepsy plantar reflex has been absent. When the patients have been on full doses of bromids the plantar reflex has been invariably absent and usually the knee-jerks also."

Oppenheim[10] does not allude to the plantar reflex in epilepsy, but says "the reflexes are abolished during the attack, and the loss of reflex excitability may last somewhat longer than the attack." It is interesting to quote in full his description of the plantar reflex. "By this term we understand the phenomenon in which excitation of the sole of the foot produces a movement in which the foot is suddenly drawn back. Naturally every form of excitation may produce this movement—touch, hot or cold applications, tickling, etc. The stronger the stimulation the stronger the reflex. The common form is a dorsal flexion (extension?) of the foot and toes; a plantar flexion occurs rarely. A contraction of the tensor fasciæ latæ may be produced by excitation of the sole. In extreme cases not only the foot, but the whole limb may be drawn back by flexion at the hip and knee. The intensity of the reflex varies. Many persons show a response only to very strong excitation, as deep pricking with a needle. Considerable variation exists among individuals as to their sensitiveness to tickling and the reflex produced thereby. We can increase the intensity of a reflex by prolongation of the stimulus or rapid repetitions of single excitations."

L. Pierce Clark[11] says: "Since the discovery of the cortical motor area and the pyramidal tracts it has been generally admitted that without the cortex there can be no epilepsy, and the impulses from the cortex must travel to the peripheral nerves along the pyramidal paths, but beyond this nearly everything is still in dispute, and the investigations of different workers are so variant as to make it impossible to harmonize their conflicting views and researches. Cestan and Le Sourd discuss at length the clinical value of the "toe phenomenon" of Babinski, and give the result, among other diseases of the nervous system, of examination of a number of cases of epilepsy. Babinski maintained that there was a close clinical connection between the toe

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phenomenon and "spinal epilepsy," mainly because the toe phenomenon showed as the first symptom of pyramidal involvement in disease of the nervous system. Cestan and Le Sourd therefore hold with Babinski that in partial epilepsies dependent upon organic changes in the pyramids the toe phenomenon is of great importance in diagnosis. This is especially valuable when we remember that even now may organic lesions upon which the so-called idiopathic epilepsies really depend go unrecognized because of the great difficulties which surround their detection."

Beevor[12] states that "the plantar reflex was absent immediately after the clonic stage, but returned in from three to thirteen minutes, the average lapse of time before its return being five minutes. Observations were made on 70 in 31 different cases, 47 immediately after the paroxysm and 23 shortly after."

Since October, 1899, the writer has examined the plantar reflex in 35 insane male epileptics under his care, making in all 1,088 tests directly after a seizure, as soon as clonus had ceased, and an equal number one hour later. In 6 cases epilepsy was congenital; in 3 it had lasted for from one to five years; in 2, from five to ten years; in 7 from ten to fifteen years; in 7 from fifteen to twenty years, and in the remainder over twenty years. Cases of grand mal only were tested.

Numerous examinations on each patient were first made at long intervals—one to three days—after a seizure, in order to establish the form for each individual as a basis for comparison. During the tests no bromids or other drugs were used, and a reasonable period was allowed for elimination when they had previously been taken. My chief aim in making these investigations was to ascertain how often the Babinski phenomenon was present; first, in the intervals; second, directly after a seizure, and third, one hour later. Attendants were carefully trained, and no test was accepted until I was absolutely sure that they were competent to observe and record exactly what happened—no more and no less. The interest they displayed and their proficiency are here gratefully acknowledged. Many of the tests were made by the writer personally and many more under his direct supervision.

Certain precautions were insisted upon. The feet must be dry and warm, and shoes and stockings removed before the clonus had ceased, in order to avoid delay. The patient's muscles must be perfectly relaxed and mental repose complete. A smooth stick with a blunt end was used and a deliberate and even stroke, made with moderate pressure from heel to ball of foot, along the outer part of the sole.

Morton Prince[13] says: "One cause of the discrepancies in reported observations is that there may be two distinct plantar reflexes, one of which is probably cerebral and one spinal. The normal cerebral reflex is generally, if not always, extension of the toes with the same movements (i. e., extension) of the foot. If precautions are not taken the cerebral reflex may mask the spinal reflex and give erroneous results; that is, override the spinal flexion (normal plantar reflex) and produce an extension." It is needless to say that the cerebral reflex, which also includes the withdrawal of the foot and active movements of the leg, was always excluded from my tests.

In the cases where the extension response is recorded there was a deliberate extension of the great toe, more or less marked, usually with separation of the four outer toes. Occasionally only the two outer toes were separated, the other two (second and middle) not moving. In a very few cases there was no response in any of the four outer toes. In no case was there flexion of any of the outer toes with extension of the big toe. In all cases where the extensor response was present there was dorsiflexion of the ankle, usually of moderate extent, and occasionally a temporary increase of the plantar arch. In two cases it was very difficult to secure mental repose and consequent complete muscular relaxation, thereby inhibiting the cerebral reflex. Hence, all observations where these conditions were not completely fulfilled were rigidly excluded.

Here follows a brief abstract of the thirty-five cases, with reports of two autopsies.

CASE 1.—Farmer, aged 41, epilepsy congenital; type, grand mal. Has occasional stupor lasting from four to fourteen days. Intervallary reflex; both feet flexor,* with an occasional extensor response in left foot. Knee-jerks very active; 32 tests. Results after fits: both feet negative, 9; both feet extensor, 4; right negative, left extensor, 2; both feet flexor, 3; right flexor, left negative, 5; right flexor, left extensor, 9. One hour after: both feet negative, 1; both feet extensor, 2; both feet flexor, 17; right flexor, left negative, 2; right flexor, left extensor, 10.

Here there was complete abolition of plantar reflex in 28 per cent. of tests after a seizure, and in only 3 per cent. one hour later. The intervallary reflex (in this case the normal one) was present in 9.4 per cent. after seizures, and in 53 per cent. one hour later.

CASE 2.—No occupation. Age 23; epilepsy at 19, after a fall. Type, grand mal. Has had occasional dreamy states, and during past three months has been in a stupor, with spastic gait and rather rigid muscles. 65 tests. Intervallary reflex is flexor in right foot; extensor in left; knee-jerks exaggerated. Results after fits: both feet negative, 35; both feet extensor, 19; right extensor, left negative, 3; right negative, left extensor, 4; both feet flexor, 2; right flexor, left extensor, 2. One hour after: both feet negative, 13; both feet extensor, 11; both feet flexor, 14; right flexor, left negative, 8; right flexor, left extensor, 16; right negative, left extensor, 3. In four tests stroking of left foot produced extension of big toe on right foot (crossed plantar).

Here there was complete abolition of plantar reflex in 53.8 per cent. of tests after a seizure, and in 20 per cent. one hour later. The intervallary reflex (right foot flexor, left extensor) was present in only 30 per cent. after a seizure, and in 24.6 per cent one hour later.

CASE 3.—Age 23; no occupation; father died insane. Traumatic epilepsy, due to blow on head in left temporal region at 10. Quiet dementia. Seizures very infrequent; grand mal. Intervallary reflex is flexor, both feet, rather slow, with absent knee-jerks. Only three tests made. Results after seizures: both feet extensor, 1; both feet flexor, 2. One hour after; both feet extensor, 1; both flexor, 1; both negative, 1.

In this case there was some kind of reflex after each seizure, and abolition in one foot only one hour later, or 33.3 per cent.

CASE 4.—Age 19; no occupation. Epilepsy began at 13; grand mal; 24 tests. Intervallary reflex: both feet flexor; knee-jerks very active. Results after fits: both feet negative, 23; right negative, left extensor, 1. One hour later: both feet negative, 1; both feet extensor, 6; both flexor, 9; right flexor, left extensor, 8.

Here there was complete abolition of plantar reflex in 96 per cent. of tests after a seizure, and in only 4 per cent. one hour later. The intervallary reflex was present in no case after a seizure, and in 37.5 per cent. one hour later.

CASE 5.—Barber, aged 68; alcoholic epilepsy; onset at 48; seizures very infrequent; grand mal; 3 tests. Intervallary reflex, mixed form, extension predominating. Knee-jerks active. Results after fits: both feet extensor, 1; both feet flexor, 2. One hour later; both feet negative, 1; both extensor, 1; both flexor, 1.

* In all the cases, as well as in the table, etc., it should be understood that the words "feet" or "foot flexor, extensor," etc., mean a flexion or extension of the *toes;* negative—no response.

CASE 6.—Farmer, aged 38. Epilepsy developed between five and ten years of age; grand mal; 75 tests. Intervallary reflex, mixed form—sometimes flexor, sometimes extensor in either or both feet.

Results after fits: both feet negative, 37; both feet extensor, 10; right extensor, left negative, 3; right negative, left extensor, 8; right flexor, left negative, 3; right negative, left flexor, 7; right extensor, left flexor, 2; right flexor, left extensor, 5. One hour later: both feet negative, 31; both feet extensor, 11; right extensor, left negative, 2; right negative, left extensor, 2; both feet flexor, 2; right flexor, left negative, 2; right negative, left flexor, 1; right flexor, left extensor, 24.

Here there was complete abolition of the plantar reflex in 49.3 per cent. of tests after seizures, and in 41.33 per cent. one hour later. The intervallary reflex occurred in 50.7 per cent. of tests after seizures, and in 55.67 per cent. one hour later.

CASE 7.—Farmer, aged 50; epilepsy at 25; grand mal; seizures very infrequent. Has occasional furor and equivalents; 11 tests made. In the intervals there is complete absence of plantar reflex and knee-jerks. Results after fits: both feet negative, 10; right foot flexor, left negative, 1. One hour later: both feet negative, 4; both feet flexor, 3; right flexor, left negative, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 90 per cent. of tests after seizures, and in 36 per cent. one hour later.

CASE 8.—Age 26; no occupation. Epilepsy began at age of five months. Patient is practically an imbecile. Seizures very frequent; grand mal; 14 tests. Intervallary reflex: flexor in one foot, usually the right; absent in the other; knee-jerks moderate. Results after fits: both feet negative, 6; both feet flexor, 3; right flexor, left negative, 1; right flexor, left extensor, 4. One hour later: both feet negative, 8; both feet flexor, 5; right flexor, left negative, 1.

Here there was complete abolition of plantar reflex in 43 per cent. after fits, and in 57 per cent. one hour later.

CASE 9.—Factory employe, aged 33. Epilepsy appeared at 22; has occasional stupor; 39 tests. Intervallary reflex: usually right foot extensor, left flexor; occasionally extensor in both feet; knee-jerks moderate. Results after fits: both feet negative, 22; both extensor, 9; right extensor, left negative, 3; right negative, left extensor, 3; right flexor, left extensor, 2. One hour later: both feet negative, 5; both feet extensor, 8; right extensor, left negative, 1; both feet flexor, 7; right flexor, left negative, 2; right flexor, left extensor, 16.

Here there was complete abolition of plantar reflex in 56.4 per cent. after seizures, and in 12 per cent. one hour later. The usual intervallary reflex was found in no case after seizures or one hour later.

CASE 10.—Mechanic, aged 34; epilepsy developed at 21; grand mal; 102 tests. Intervallary plantar reflex: flexor in one or both feet; knee-jerks moderate. Results after fits: both feet negative, 78; both feet extensor, 1; right extensor, left negative, 3; right negative, left extensor, 2; both feet flexor, 2; right flexor, left negative, 11; right negative, left flexor, 2; right flexor, left extensor, 3. One hour later: both feet negative, 34; both feet extensor, 7; right extensor, left negative, 6; right negative, left extensor, 5; both feet flexor, 4; right flexor, left negative, 37; right negative, left flexor, 2; right flexor, left extensor, 7.

Here there was complete abolition of plantar reflex in 76 per cent. of tests after seizures, and in 33 per cent. one hour later. The intervallary reflex was present in 14.7 per cent. after seizures, and in 42 per cent. one hour later.

CASE 11.—Plumber, aged 48; onset of epilepsy at 20 following left hemiplegia. Measurements of limbs as follows:

	Right.	Left.
Arm—length	37.5 c.m.	38.3 c.m.
Arm—circumference	33.7 c.m.	28.6 c.m.
Forearm—length	25.4 c.m.	23.4 c.m.
Forearm—circumference	29.9 c.m.	26.0 c.m.
Hand—circumference	21.0 c.m.	19.7 c.m.
Thigh—length	53.5 c.m.	53.5 c.m.
Thigh—circumference	57.8 c.m.	50.8 c.m.
Leg—length	38.8 c.m.	38.2 c.m.
Leg—circumference (calf)	36.2 c.m.	31.2 c.m.
Ankle—circumference	24.7 c.m.	24.7 c.m.
Foot—circumference (arch)	24.7 c.m.	24.7 c.m.

Patient has no use of left hand, which shows marked wrist drop with flaccid contractures of fingers, but can swing arm from shoulder. Left foot shows marked pes cavus. Patient swings and partially rotates left foot in walking, bringing it to the floor with a sudden flap. Character of seizures, grand mal, very severe, and average 1-1.8 days; 29 tests made. Aura; dazzling of eyes, and everything seems to be in motion, and a chill comes over left side of body. Convulsions begin by a shaking of the right hand; then a wild cry is uttered and he falls to the floor; convulsions pass rapidly down right side to foot, causing it to turn inward, and then pass over to left side, where they are most severe. Clonus lasts about three minutes, is followed by stupor for about five to ten minutes, when he arises, and resumes his seat as if nothing had happened. Intervallary plantar reflex; right foot flexor, left (paralyzed) foot, a marked extensor. Results after seizures: both feet negative, 13; right flexor, left negative, 9; right flexor, left extensor, 4; right absent, left extensor, 3. One hour later: both feet negative, 15; right flexor, left extensor, 5; right flexor, left negative, 4; both feet extensor, 1; both feet flexor, 1; right negative, left flexor, 3.

Here there was complete abolition of plantar reflex in 45 per cent. of seizures after fits, and in 51.7 per cent. one hour later. It is interesting to note that the usual intervallary reflex—right flexor, left extensor—was present in four tests out of twenty-nine, after fits, and in five one hour later. There was an extensor response in left foot only in three other tests after fits, and one hour later an extensor response in both feet. There was never any flexor response in left foot after seizures, but it occurred in four tests one hour later. Why there should be a flexor response in the paralyzed foot I am unable to explain.

CASE 12.—Age 32; no occupation. Onset of epilepsy during first dentition. Seizures have continued ever since at pretty regular intervals, with steadily progressive mental deterioration. Has periodical excitements when he stutters and repeats phrases, etc. (word clonus). Seizures usually nocturnal; only seven day-seizures in past three years; 74 tests. Intervallary plantar reflex; flexor response in both feet; knee-jerks absent. Results after fits: both feet negative, 64; both feet extensor, 1; both feet flexor, 1; right flexor, left negative, 6; right negative, left flexor, 1; right flexor, left extensor, 1. One hour after: both feet negative, 22; both flexor, 19; right flexor, left negative, 29; right negative, left flexor, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 89 per cent. of tests after seizures, and in 30 per cent. one hour later. The intervallary reflex was present only once after seizures, and in 26 per cent. one hour later.

CASE 13.—Factory employe, aged 49; alcoholic epilepsy; onset at 36; seizures infrequent; grand mal; 42 tests. Intervallary reflex: right foot flexor, left negative; knee-jerks moderate. Results after fits: both feet negative, 23; right flexor, left extensor, 5; both feet extensor, 7; right flexor, left negative, 1; right negative, left flexor, 3; right flexor, left extensor, 3. One hour later: both feet negative, 20; both extensor, 3; right extensor, left negative, 1; right negative, left extensor, 3; right flexor, left negative, 7; right negative, left flexor, 4; right flexor, left extensor, 4.

Here there was complete abolition of plantar reflex in 55 per cent. of tests after seizures, and in 48 per cent. one hour later. The intervallary reflex was present only once after a seizure, and in 16.6 per cent. one hour later.

CASE 14.—Age 34; no occupation; epilepsy began at four. Has had repeated furors in former years, in one of which he killed a man with a blow of his fist. Now displays fluctuations chiefly in the emotional sphere, having periodical depressions when he reproaches himself, weeps, fears death is imminent, and begs piteously for a priest and his brother. Seizures severe but infrequent; 16 tests. Intervallary plantar reflex: extensor in one or both feet. Results after fits: both feet negative, 12; right negative, left extensor, 3; right flexor, left negative, 1. One hour later: both feet negative, 10; both extensor, 1; right extensor, left negative, 1; right negative,

left extensor, 1; both flexor, 1; right negative, left flexor, 1; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 75 per cent. of tests after seizures, and in 62 per cent. one hour later. The intervallary reflex was present in 18 per cent. of tests after fits, and in 25 per cent. one hour later. This patient once had status epilepticus—12 severe seizures, each lasting from ten to fifteen minutes with intervals varying from ten to twenty minutes. Consciousness was totally abolished, not only in the intervals, but for four hours after the last fit, and during this whole period the plantar reflex was absent in each foot.

CASE 15.—Age 28; no occupation; onset of epilepsy in "childhood." Patient is pompous and affected; writes absurd poetry; and has had several attacks of status which were always aborted by compression of the carotids. Seizures very frequent and severe; 14 tests made. Intervallary plantar reflex: both feet an active flexor, with very active knee-jerks. Results after fits: both feet negative, 5; both extensor, 1; right negative, left extensor, 1; both flexor, 1; right flexor, left negative, 2; right flexor, left extensor, 4. One hour later: both negative, 7; both extensor, 3; both flexor, 3; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 36 per cent. of tests after fits, and in 50 per cent. one hour later. The intervallary reflex was present only once after a seizure, and in 21 per cent. one hour later.

CASE 16.—Laborer, aged 36. Had syphilis in 1894-5, epilepsy developing soon after. No focal symptoms. Has occasional dreamy states; seizures very infrequent; only 7 tests made. Intervallary plantar reflex; usually flexor in one or both feet; occasionally an extensor response in left foot, none in right; knee-jerks moderate. Results after fits: both feet negative, 3; both extensor, 1; both flexor, 2; right extensor, left flexor, 1. One hour later: both feet negative, 4; both extensor, 1; both flexor, 1; right flexor, left extensor, 1.

CASE 17.—Farmer, aged 51; heredity denied; cause unknown. Epilepsy appeared at 36; seizures occur in groups of four to eight, usually in one night, with intervals of about four weeks, and are very severe, being followed by profound stupor lasting from one to two days; 18 tests. In one group of four fits there was some kind of response after each; in another group of five there was a response after the second, third and fifth fit, and none after the other two. During the post-epileptic stupor the reflexes were absent in 33 per cent. of tests, and present in some form in the remainder. Intervallary reflex: extensor response in both feet usually, sometimes in right only. Results after fits: both feet negative, 15; right extensor, left negative, 2; right negative, left extensor, 1. One hour later: both feet negative, 6; both extensor, 3; right extensor, left negative, 4; right negative, left extensor, 2; right flexor, left negative, 1; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 83 per cent. of tests after seizures, and in 28 per cent. one hour later. There was an extensor response in either right or left foot in two tests after fits; and the usual intervallary response in 39 per cent. one hour later.

CASE 18.—Age 27; no occupation; grandfather insane; paternal great-uncle an epileptic. At age of 14 had whooping cough, and shortly after began to have epileptic seizures, which at first were nocturnal, and are so now for the most part. At times very religious, with periods of violence. Is a confirmed masturbator. Presents stigmata of degeneration—ogival palate, irregular rodent teeth, and asymmetry of skull and face. Averages 3.46 seizures daily, without bromid, the use of which, while diminishing the number of fits, makes him very irritable and unmanageable. He recovers rapidly from seizures and in the intervals is bright, alert, and keen, showing no perceptible deterioration for the past fourteen years; 84 tests. Intervallary reflex: extensor response in both feet; knee-jerks very active. Results after fits: negative, 38; both feet extensor, 9; right absent, left extensor, 5; both feet flexor, 9; right flexor, left negative, 9; right flexor, left extensor, 14. One hour later: negative, 20; both feet extensor, 3; right negative, left extensor, 1; both flexor, 31; right flexor, left negative, 22; right negative, left flexor, 1; right flexor, left extensor, 6.

In this patient we find his usual plantar reflex—an extensor response—present in only 9 out of 84 tests after seizures, and in only 3 one hour later; there was a flexor response in one or both feet in 18 and 53 cases, respectively, while the reflex was abolished in 38 and 20 cases.

CASE 19.—Laborer, aged 48; alcoholic epilepsy at 36, seizures very infrequent and usually nocturnal; 15 tests. Intervallary plantar reflex; flexion, with an occasional extensor response in left foot; knee-jerks very active. Results after fits: both feet negative, 11; both flexor, 2; right negative, left extensor, 2. One hour later: both negative, 3; both flexor, 8; right flexor, left negative, 1; right flexor, left extensor, 3.

Here there was complete abolition of plantar reflex in 73 per cent. of tests after seizures, and in 20 per cent. one hour later. The intervallary reflex was present in 13 per cent. and 60 per cent., respectively.

CASE 20.—Laborer, aged 42; epilepsy at 4. There is simple but pronounced deterioration, with infrequent transitory distempers; seizures of moderate frequency, but severe; 23 tests. Intervallary plantar reflex; an active extensor response in each foot; knee-jerks variable. Results after fits: both feet negative, 4; both extensor, 8; right extensor, left negative, 1; right negative, left extensor, 7; both flexor, 1; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later; both feet negative, 5; both extensor, 8; right extensor, left negative, 3; both flexor, 4; right flexor, left negative, 1; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 17 per cent. of tests after seizures, and in 22 per cent. one hour later. The intervallary response (both feet extensor) was present in 35 per cent. after fits, and in 35 per cent. one hour later.

CASE 21.—Cigar maker, aged 26; onset of epilepsy at 11; has periodical transitory distempers; 44 tests. Intervallary plantar reflex; both feet flexor; very active knee-jerks. Results after fits: both feet negative, 30; both extensor, 3; right extensor, left negative, 1; right flexor, left negative, 2; right flexor, left extensor, 6; right negative, left extensor, 2. One hour later: both feet negative, 6; both extensor, 2; right extensor, left negative, 1; right negative, left extensor, 1; both feet flexor, 25; right flexor, left negative, 3; right flexor, left extensor, 6.

Here there was complete abolition of the plantar reflex in 68 per cent. of tests after seizures, and in 14 per cent. one hour later. The intervallary reflex was absent in all tests after seizures, but present in 57 per cent. one hour later.

CASE 22.—Farmer, aged 47; onset of epilepsy in childhood; has periodical transitory distemper; 16 tests made. Intervallary plantar reflex: variable, usually flexor in one or both feet, rather seldom extensor in both feet; knee-jerks moderate. Results after fits: both feet negative, 13; both extensor, 1; right extensor, left negative, 1; right flexor, left extensor, 1. One hour later: both feet negative, 3; both flexor, 13.

Here there was complete abolition of plantar reflex in 81 per cent. of tests after seizures, and in 19 per cent. one hour later. The intervallary reflex was absent after seizures, but present in 31 per cent. of tests one hour later.

CASE 23.—Farmer, aged 25; father intemperate; onset of epilepsy at 13. Besides typical grand mal he has peculiar attacks which warrant a full description. He also presents psychic equivalents in the form of brief periods of bewilderment, and occasional conscious delirium with a marked religious coloring. In October, 1898, he attacked without provocation a fellow patient, saying, "I want to kill you." Regular seizures: no aura; head and eyes draw slowly backward and to the right and then he would fall. Tonus lasted a few seconds, then the left shoulder would be elevated, the arms would lie close to side, hands clenched with thumbs between index and middle fingers, and a general clonus ensue. Clonus would be followed by a heavy sleep for two or three hours from which he could not be aroused.

In January, 1900, he averaged eight of these seizures daily for one week, when he became so exhausted that it was necessary to confine him to bed, where he remained quietly, rarely changing his position and apparently indifferent to the external world. Four days later he became very restless and exceedingly noisy at night. During the ten days that he remained in bed he had only four fits, but as soon as he was allowed to be in the ward he began to have a very peculiar kind of attack. At the beginning he would walk in a circle with diameter of about six feet, gradually going faster and faster until he fell to the floor, generally striking on his left side, with head flexed. As soon as he fell he would begin kicking with both feet and striking with his hands, or catching hold of anyone near him with a tenacious grip. During these attacks his muscles become rigid but there is no clonus. Consciousness is deeply clouded, although the eyes move as if recognizing objects. As he emerges from the attack he begins to laugh heartily, and in a few minutes gets up and has complete amnesia of all that has occurred. When the attacks occur at night he kicks around in bed for awhile and finally rolls (it is not a fall) to the floor, where he kicks very little, gets up and rattles the doorknob or raps on the door. This sort of attack was present for two months without any typical grand mal intervening, and has been noticed occasionally since. There was scarcely a day when he did not have at least one, and on some days he had four or five. In a few, consciousness was not wholly clouded and he would respond to a loud, sharp order.

Intervallary plantar reflex: right foot flexor, left extensor; reflex occasionally absent; knee-jerks moderate; 38 tests. Results after fits: both feet negative, 21; both extensor, 1; both flexor, 5; right flexor, left negative, 8; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later: both feet negative, 16; both extensor, 1; both flexor, 8; right flexor, left negative, 8; right negative, left flexor, 5.

Here there was complete abolition of plantar reflex in 55 per cent. of tests after seizures, and in 42 per cent. one hour later.

All the above results were in cases of grand mal only; tests made during the peculiar attacks described above furnished variable results corresponding pretty closely to those found in the former.

CASE 24.—No occupation; age 28; onset of epilepsy at 10; occasional dreamy states; 29 tests. Intervallary plantar reflex: both feet a very active extensor; knee-jerks very active. Results after fits: both feet negative, 11; both extensor, 6; right negative, left extensor, 6; both flexor, 3; right flexor, left extensor, 3. One hour later: both negative, 9; both extensor, 13; both flexor, 3; right negative, left flexor, 2; right extensor, left flexor, 1; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 38 per cent. of tests after seizures, and in 31 per cent. one hour later. The intervallary reflex was present in 21 per cent. of tests after seizures and in 45 per cent. one hour later.

CASE 25.—Musician, aged 43; alcoholic epilepsy with marked detericration, especially in memory and judgment. Seizures very infrequent and often light; 11 tests. Intervallary plantar reflex: both feet very active extensor; knee-jerks very active. Results after fits: both feet negative, 8; both extensor, 1; right negative, left extensor, 2. One hour later: both negative, 6; both extensor, 4; right flexor, left extensor, 1.

Here there was complete abolition of plantar reflex in 73 per cent. of tests after seizures, and in 55 per cent. one hour later. The intervallary reflex was present only once after a seizure, and in 36 per cent. one hour later.

CASE 26.—Laborer, aged 33; alcoholic epilepsy; seizures very infrequent, but numerous attacks of petit mal; 4 tests. Intervallary plantar reflex; mixed type; sometimes flexor or extensor in both feet, and sometimes flexor in right and extensor in left. Results after fits: both feet extensor, 2; right negative, left extensor, 1; both flexor, 1. One hour later: both feet flexor, 2; right extensor, left flexor, 1; right flexor, left extensor, 1.

CASE 27.—No occupation; age 40; had scarlet fever at 7, followed by paralysis of left side, with shortening and marked atrophy of limbs; left arm absolutely helpless. Convulsions began some time later, commencing in left side and rapidly becoming general; 16 tests. Intervallary plantar reflex; right foot flexor, with an active extensor response in left foot; knee-jerks exaggerated, more so on left side. Results after fits: both feet negative, 10; right negative, left extensor, 1; both feet flexor, 3; right flexor, left negative, 2. One hour later: both feet negative, 3; both flexor, 7; right flexor, left negative, 4; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 62 per cent. of tests after seizures, and in 19 per cent. one hour later. The intervallary response was absent after each seizure but present in 13 per cent. one hour later. The appearance of a flexor response in the left toes in three tests after seizures and in seven tests one hour later is interesting. The writer has, however, found similar anomalies in the reflex in several hemiplegics—not epileptic—at different times, i. e., sometimes an extensor response, sometimes a flexor and sometimes no response whatever in the paralyzed foot.

CASE 28.—Age 17; onset of epilepsy in infancy; has periodical distempers; seizures very infrequent but severe, and followed by several hours of stupor; 23 tests. Intervallary plantar reflex: right flexor, left extensor; occasionally extensor in both feet; knee-jerks very active. Results after fits: both feet negative, 21; right extensor, left negative, 2. One hour later: both feet negative, 4; right extensor, left negative, 2; both feet flexor, 11; right flexor, left negative, 3; right negative, left flexor, 1; right extensor, left flexor, 2.

Here there was complete abolition of plantar reflex in 95 per cent. of tests after seizures, and in 14 per cent. one hour later. The intervallary reflex was absent not only after seizures but also one hour later.

CASE 29.—Epileptic imbecile, aged 40; onset in infancy; seizures infrequent; 27 tests. Intervallary plantar reflex: right foot flexor, left negative; knee-jerks moderate. Results after fits: both feet negative, 25; right negative, left flexor, 1; right flexor, left extensor, 1. One hour later: both feet negative, 10; both flexor, 6; right flexor, left negative, 9; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 92 per cent. of tests after seizures, and in 37 per cent. one hour later. The intervallary response was absent after all seizures, and present in 33 per cent. of tests one hour later.

CASE 30.—Laborer, aged 64; alcoholic epilepsy; onset in middle life; seizures infrequent; 4 tests. Intervallary plantar reflex: flexor in one foot, the other negative; knee-jerks moderate. Results after fits: both feet negative, 3; right flexor, left extensor, 1. One hour later: both feet negative, 1; both flexor, 1; right flexor, left extensor, 2.

CASE 31.—No occupation; aged 41; a moderate drinker; epilepsy began at 23 after a severe attack of measles; seizures very frequent, averaging 1.69 daily. The bromids made him very irritable, and are seldom given; 84 tests. Intervallary plantar reflex: right foot extensor, left flexor not very marked; knee-jerks fairly active. Results after fits: both feet negative, 48; both extensor, 7; right extensor, left negative, 14; right flexor, left negative, 12; right flexor, left extensor, 3. One hour later: negative 37; both feet extensor, 5; right extensor, left negative, 7; right negative, left extensor, 3; both flexor, 8; right flexor, left negative, 16; right negative, left flexor, 6; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 57 per cent. of tests after seizures, and in 44 per cent. one hour later. The intervallary reflex was absent, not only after the seizures but also one hour later.

CASE 32.—Carriage maker, aged 54 (?); onset of epilepsy in 1883; had syphilis at age of 25-30. Has dreamy states, in one of which he lacerated his throat with a small piece of scrap-iron which he had picked up while out walking. Seizures infrequent; 26 tests. In the intervals the plantar reflex is absent; in only one out of numerous tests an extensor response was found in right foot; knee-jerks very sluggish and slight.

Results after fits: both feet negative, 19; right flexor, left negative, 3; right negative, left flexor, 2; right flexor, left extensor, 2. One hour later: both feet negative, 16; both flexor, 1, right flexor, left negative, 6; right negative, left flexor, 3.

Here there was complete abolition of the plantar reflex in 73 per cent. of tests after seizures and in 62 per cent. one hour later. It is interesting to note that in this case, where there is practically no plantar reflex in the intervals, some kind of response was found in 27 per cent. of cases after seizures and in 38 per cent. one hour later.

CASE 33.—No occupation; age 39; no history of case obtained; 37 tests. Intervallary plantar reflex: variable, with flexor response predominating; knee-jerks very active. Results after fits: both feet negative, 19; both extensor, 5; right negative, left extensor, 3; both flexor, 5; right flexor, left negative, 2; right flexor, left extensor, 3. One hour later: both feet negative, 11; both extensor. 7; both flexor, 7; right flexor, left negative, 4; right flexor, left extensor, 8.

Here there was complete abolition of the plantar reflex in 51 per cent. of tests after seizures, and in 30 per cent. one hour later. The intervallary reflex was present in 19 per cent. of tests after seizures and in 30 per cent. one hour later.

CASE 34.—Age 39; heredity unascertained; onset of epilepsy in childhood. Stigmata: ill-shaped and flaring ears, asymmetry of skull and face; narrow and high palate, and prognathism. Patient very religious, loquacious, with great tendency to detail and noisy. He had frequent attacks of moderate furor, usually following fits, but sometimes as equivalents. Seizures averaged one in two days, and were very severe; clonus began in right side of face—the eyes rolling in the same direction—and rapidly extended to right arm and leg, and then to left side. As clonus abated he would rub his right side, leg, and head. About five minutes later he would regain his feet and rush violently around the ward, screaming and resisting violently but automatically all attempts at restraint. Often he would whine in a peculiar manner. Consciousness was fully restored in about twenty minutes. He reacted poorly to bromids; 21 tests made. The intervallary plantar reflex was a flexor response in both feet; knee-jerks sluggish. Results after fits: both feet negative, 7; both extensor, 4; right extensor, left negative, 1; right negative, left extensor, 2; right flexor, left negative, 2; right flexor, left extensor, 5. One hour later: both feet negative, 3; both extensor, 7; right extensor, left negative, 1; right negative, left extensor, 1; both flexor, 1; right flexor, left negative, 6; right flexor, left extensor, 2.

Here there was complete abolition of plantar reflex in 33 per cent. of tests after seizures, and in 13 per cent. one hour later. The intervallary response was never present immediately after seizures, and but once only, one hour later.

Autopsy 13 hours after death. The specimens from the cerebral cortex and spinal cord were placed in the fixing and hardening solutions fourteen hours after postmortem. The cord specimens were fixed and hardened in Mueller's fluid, and those of the brain in a 95 per cent. alcohol (Nissl method) and Zenker's (eosin-methylene stain), and also in Mueller's fluid (Cox-Golgi method). The cord specimens were stained according to the Kulschitzky-Wolters method with Van Gieson's picric acid and fuchsin stain. The sections examined in the cord were taken from the first and eighth dorsal, the third lumbar, and fourth sacral segments. All of these sections presented a normal appearance. The brain weighed 1235 grams, but in all respects appeared normal from the microscopic examination. The microscopic examination of the cortex, including specimens from the right and left paracentral lobules, and from the first frontal convolution on each side, failed to disclose any apparent abnormality, except the great congestion of the blood-vessels. The cortex was not reduced in thickness, and the ganglion cells were well arranged and of normal number.

CASE 35.—No occupation; age 37; onset of epilepsy at 15; cause unascertained. About five years before death patient developed periods of stupor, lasting from three to ten days, during which his muscles were spastic, and there was complete incoördination, with static ataxia. He was usually kept in bed at these periods, but when up sat with head flexed to the limit; his hands were clenched with thumbs turned in, and arms drawn up, while one leg was crossed over the other, and swung rhythmically to and fro in an automatic manner. This swinging motion of legs was partly volitional, to all appearances. Occasionally he would walk in a zig-zag manner for a short distance, always stepping on the ball of the foot and toes, with the heel well elevated about two inches from the floor. One year before death this spastic condition became permanent, and often one could lift him as if he were a log. He always swallowed well, even to the very last. He had been completely demented for several years.

A marked ankle clonus was always present, and also a clonus of arms and legs on exertion. His knee-jerks were exaggerated to the most extreme degree, as well as the cutaneous reflexes, the plantar reflex presenting marked extension of all the toes on both sides, with separation of the four outer (a pure Babinski). The pupils were usually dilated but presented no inequalities. Seizures infrequent, but severe; 16 tests. Results after seizures: both feet negative, 15; both flexor, 1. One hour later: both feet negative, 5; both extensor, 3; right negative, left extensor, 2; right flexor, left extensor, 6.

Here there was complete abolition of the plantar reflex in 94 per cent. of tests after seizures, and in 31 per cent. one hour later. The usual intervallary response—extensor in each foot—was never present immediately after a seizure, and in only 19 per cent. of tests one hour later.

Autopsy thirteen hours after death. The technic employed in the preparation of the specimens from the spinal cord and cerebral cortex was similar to that used in the preceding case (34), except that a segment from the medulla and all of the cortical specimens were in addition stained according to the Marchi method; and the cord specimens were hardened in Zenker's and stained by the eosin-methylene blue method. After hardening in Mueller's fluid the entire cord was sectioned in gross at intervals of 1 cm. Macroscopically, these gross sections gave no evidences of patches of sclerosis. Microscopically, sections were examined from the first and sixth cervical, third dorsal, and fifth lumbar segments. None of these sections gave evidence of sclerosis in any of the columns of the cord. The anterior horn cells were normal throughout the cord; and the posterior horn cells appeared normal in the cervical and dorsal regions. In Clarke's columns the ganglion cells showed more or less marked chromatolysis, with displacement of the nucleus to the periphery of the cell body. The brain weighed 1200 grams. The pia was somewhat edematous over the vertex. Specimens of the cerebral cortex, taken from the right and left paracentral lobules and from the first frontal convolutions on each side, showed a slight leptomeningitis, a slight increase of glia cells in the superficial layer, and an alteration of the cytoplasm of the ganglion cells, which corresponds to the cell shrinkage described by Hoch. The cortex was not shrunken and the ganglion cells were of good number and arrangement. The blood vessels of the cortex were much congested.

Both autopsies were made by Dr. A. R. Defendorf.

SUMMARY.

Tests for the plantar reflex were made on thirty-five insane male epileptics and include: 1, 700 observations at varying intervals between seizures in order to establish a norm for each individual; 2, 1,088 tests made immediately after seizures, as soon as clonus had ceased, and 3, a similar number of tests made an hour later. In these 35 patients we found the individual intervallary reflex to be of the normal type—flexion of toes on both sides—in 10 cases; there was a marked extensor response (Babinski) in 7; no response whatever in 2; and in the remaining 16 cases a mixed response, i. e., right flexor, left extensor, 5; right flexor, left negative, 5; right extensor, left flexor, 2, and in 4 cases an irregular response, sometimes flexor, sometimes extensor, or

varying mixtures of flexor, extensor and negative in one or other foot, with no predominant type. The percentages were: flexor response, 28.57 per cent.; extensor response (Babinski), 20 per cent.; mixed response, 45.71 per cent., and entire absence of response in 5.71 per cent.

The plantar reflex presented even more variations from the normal type in tests immediately after cessation of clonus and one hour later, as seen in the following table, which shows nine variations.

Table showing type of plantar reflex in 35 insane epileptics:

Type.	Intervallary.	After Clonus.	Per cent.	1 hour later.	Per cent.
Extensor response on each side..	7	103	9.56	112	10.29
Right extensor, left negative....	0	33	3.04	29	2.66
Right negative, left extensor....	0	66	6.07	24	2.20
Flexor response on each side....	10	45	4.04	226	20.78
Right flexor, left negative.....	5	81	7.44	179	16.46
Right negative, left flexor.....	0	18	1.66	32	2.94
Right extensor, left flexor.....	2	3	0.27	4	0.36
Right flexor, left extensor.....	5	79	7.26	143	13.15
Irregular	4	...	.....	.....	.....
No response in either side.....	2	660	60.66	339	31.16
Totals.....	35	1088	100.00	1088	100.00

From this table we see that there was an extensor response on the right side in 12.87 per cent. and on the left side in 22.89 per cent. of tests immediately after seizures; while one hour later the results were respectively 13.31 per cent. and 25.65 per cent. This predominance, nearly two to one, of the extensor response on the left over the right side, is interesting and noteworthy. When an extensor response was found on one side only it was more frequent in the left foot. Including all the tests we find a right extensor response 69 times, and a left extensor 312 times.

We also see that some kind of plantar reflex—flexor extensor or mixed—was found in 40 per cent. of tests made as soon as clonus had ceased and in 68 per cent. one hour later. In Case 14, as well as in two other cases where status epilepticus occurred, but not included in these observations, the reflexes were totally abolished in the intervals, and for periods after the last seizure varying from four to eight hours. In only one case (No. 7) was there complete absence of an extensor response in all tests immediately after fits. It is somewhat difficult to compare my tests, made at exact periods, with those reported by others, who leave the exact time in doubt, except Collier, who states that "after every fit of severe convulsions lasting any length of time the extensor response was found present and lasting some time." Some writers, as Eskridge, tested epileptics only in the intervals.

The appearance of a flexor response on the paralyzed side several times in two cases of post-hemiplegic epileptics (Cases 11 and 27) is interesting. If the Babinski phenomenon is never present except in pyramidal lesions, are we to assume that such lesions occur in epilepsy, or may the extensor response in the latter be due to a temporary disturbance in the pyramidal tracts on one side only or on both sides? It is certain that as far as my tests go the Babinski sign does appear on both sides at once, or on right and left side only, after some seizures, and after others we find a normal, mixed or negative response in the same patient.

In conclusion, the results of 2,176 tests of the plantar reflex in epileptics within one hour after seizure, plus 700 tests made in the intervallary periods to establish the norm for each individual, show that in any given patient the plantar reflex displays marked variations, although in each case some one type is more or less predominant. The explanation is not easy and the variations are hard to understand, but perhaps no more so than epilepsy itself.

BIBLIOGRAPHY.

1. Text-Book of Nervous Diseases.
2. Practical Diagnosis.
3. Practice of Medicine.
4. Text-Book of Medicine.
5. Diseases of the Nervous System.
6. Text-Book of Mental Diseases.
7. Brain, vol. xxii, p. 71.
8. Journal of Nervous and Mental Diseases, June, 1900.
9. JOURNAL A. M. A., Jan. 19 and 26, 1901.
10. Diseases of the Nervous System, 1900.
11. Journal of Nervous and Mental Diseases, vol. xxvii, pp. 331 and 344.
12. Quotation from Hare, "Epilepsy, Its Pathology and Treatment."
13. Boston Medical and Surgical Journal, Jan. 24, 1901.

REMARKS CONCERNING THE MANAGEMENT AND TREATMENT OF RHINOPHARYNGEAL TONSILS BY THE GENERAL PRACTITIONER.*

ROBERT C. MYLES, M.D.
NEW YORK CITY.

As teachers in the graduate schools of general medicine we should endeavor to give that instruction which our matriculants can safely make use of after returning to their homes. I know that they receive no more enthusiastic nor more frequent instruction than that concerning adenoids. I wish to address you in behalf of those children who live in the country districts, far from the larger towns, from whence it is either impossible or inexpedient for them to be taken in order that a specialist may treat them according to some of the many vaunted methods.

It is possible to teach the general practitioner to perform the various operations suggested for the removal of adenoids, but the time required for the proper instruction in the delicate practical manipulative technic of certain methods of procedure makes many of them unfeasible. Operations with the Lowenberg's forceps or some of its modifications should not be attempted by one who does not fully appreciate the amount of harm that can be done to the rhinopharyngeal tissues.

On the other hand, any general practitioner with little or no practical skill can be readily and easily taught to operate safely with the Gottstein curette or some of its modifications. When considering the subject of rhinopharyngeal tonsillotomy one must weigh the merits of the respective methods, first as to the safety to life and the prevention of injury to the other tissues; second, approximately complete removal of all the offending lymphoid masses; third, hemorrhage; fourth, the humanitarian side. The serious death rate among the cases of general anesthesia should be more carefully investigated as to the cause and percentage. The destruction of tissue, other than lymphoid, can never be determined unless we are permitted to examine macroscopically and microscopically the masses that have been removed.

In regard to complete removal, it has been demonstrated that recurrence and new growths occur after all methods of extirpation, but far less frequently after general anesthesia and the use of forceps than the other methods. As to frequency of harmful hemorrhage the curette, by its sharp-cutting edge, is more liable to cause alarming bleeding than the forceps constructed after

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the original idea of Lowenberg. When we consider the horrible suffocating struggles of a resisting child as it is being put under ether, in some cases, it would seem a mercy to remove the growths under cocain; of course, this is all done away with where nitrous oxid gas is previously administered. But it is concerning the management of the rhinopharyngeal tonsils by the general practitioner that we wish to speak.

In certain cases the general practitioner may successfully use the adenoid forceps, the snare or the finger nail, but these methods can not be so universally and favorably adopted by him as procedure by the curette. It has been my custom to urge the general physicians whom I have had the honor of teaching to use the curette after thorough cocainizing for at least half an hour; the cocain is passed on a curved cotton carrier behind the soft palate to the uppermost part of the adenoid; this is done at intervals of from five to ten minutes; the solution of cocain employed varies from 10 to 100 per cent. A 0.1 per cent. solution of cocain should be sprayed through the nose and then stronger solutions should be used on cotton carriers or through canulas passed through the nose. The child is wrapped with a sheet, which should pass around his body several times, with the hands down by the sides in soldier position; the sheet is then tightly and securely pinned from top to bottom, the child is then placed on the right knee of assistant or attendant, who embraces him firmly with arms and legs and the head is securely held by the nurse. For general use a medium-sized semi-circular shaped curette which has been well sharpened is passed upward behind the soft palate until it strikes the posterior border of the septum, then it is firmly driven upward until it strikes the vault and presses on the rostrum of the vomer. The cutting surface of the curette must be kept at right angles to a perpendicular line through the center of the head, a quick, firm movement is made directly backward and downward; usually the large mass removed consists of nearly all of the adenoid tonsil proper. The curette is reintroduced, rapid and moderately firm scrapings are made in both of Rosenmüller's fossæ and over the posterior pharyngeal wall, then the finger is introduced and any remaining masses are broken up and smoothed down.

The after-treatment consists of an immediate insufflation of a powder composed of equal parts of aristol and boric acid. The patient should be denied active exercise and should not be allowed to go where he can not be seen quickly by the operator or his assistant in case of serious bleeding.

Every student should be carefully and practically instructed in the details of tamponage of the rhinopharynx. The author has found the smallest sized urethral catheter, from which the stylet has been removed, to be the best instrument for passing the strings through the nose and mouth. The tampon should be from three-quarters to one and one-quarter inches in diameter, the age of the child determining the size, should be aseptic and antiseptic and remain in position from twelve to thirty-six hours. The earlier it is removed, other things being equal, the less the liability to an attack of otitis media acuta.

DISCUSSION.

DR. O. R. HOLMES, Cincinnati—I scarcely feel like criticising anything that Dr. Myles says. I have great admiration, as we all have, for everything he does and for his ability. But I can not quite agree with the sentiments of his paper. It has been my experience to let internes in the hospitals and my assistants operate, and I often notice they make very bunglesome efforts at operations, and if these men, who have been with specialists and have helped in operations, will leave a large part of the posterior mucous membrane hanging down as a flap, because they carry the curette too far downward and backward (and that occurs once in a while with operators who are fairly expert), if the general impression gets out that the general practitioner should do this operation there would be many unfortunate results. There are many general practitioners who can do this operation, but it is generally the one who is least competent who thinks he can do it, and it is for that reason I can not subscribe to the Doctor's idea that the general practitioner should be taught to do the surgical operation. I have made nothing like the number of operations Dr. Myles has, but I have made a few hundred, and I always make them under chloroform or nitrous oxid. I do not regard it as such a simple operation, if you do a thorough and clean operation. If it is not so easy in the hands of a man who has made several hundred operations, it is probably less so, and complications are more likely to occur, in the hands of one not accustomed to use instruments so much.

DR. J. E. BROWN, Columbus, Ohio—I have been much interested in this subject of adenoids for the past fourteen years, and have performed a large number of operations for the disease. As I look back to those operations I did ten years ago I believe I did not do as thorough work then as now. I say this to bring out the point that this operation rightly performed is not so simple a one that the general practitioner without experience can do it thoroughly. I now and then attempt an operation on young children under cocain, and frequently in these operations done in this manner I have had later to give a general anesthetic and do the more thorough operation. Dr. Richards' paper, it seems to me, brought out the point that a general anesthetic is necessary for the proper treatment of these cases. Our general practitioners should be taught that it is a procedure demanding a general anesthetic. If then they wish to attempt it without general anesthesia, all well and good, but this should not be our teaching.

We hear it stated that naso-pharyngeal adenoids should be removed when symptoms of obstruction are present. I have been much surprised in some of the cases that have come to me with symptoms of middle ear trouble, in which adenoids were present, at the immense size of the adenoid masses removed, yet in which cases there had been absolutely free nasal breathing.

DR. EDWIN PYNCHON, Chicago—I have been doing this operation as often as possible without an anesthetic. I believe the fear of the child while struggling over the anesthetic is often worse than the pain of the operation. As regards the use of cocain to reduce the pain in this operation, I think its value is more fanciful than real. The use of cocain often causes almost as much annoyance as the operation itself. I find, though, that by introducing two cotton applicators, one through either nostril, and then having the patient or somebody else press them against the pharyngeal wall, I probably get as much effect therefrom as in any other way. When the forceps are used, I think it is wise to use the curette afterward. One of the disadvantages in using the curette is that a fragment drops down back of the uvula every once in a while, as suggested by Dr. Holmes. Now, why does this occur? It is because the curettes most often used, when introduced into the vault, have the cutting blade at such an angle that it is the side instead of the edge of the blade that first does the curetting, while lower down the cutting edge cuts too deeply, so a piece is permitted to fall down behind the uvula. I have had a curette so made that it cuts at the highest point and also has side cutting blades, with which the fossa of Rosenmüller on either side can be curetted.

DR. ROBERT C. MYLES, New York City—The paper referred especially to that class of cases that could not be seen by a specialist, and I do not know how many such cases there are. The general practitioner can remove with one movement of the curette most of the adenoid tissue. These cases are improved, even by an imperfect operation. Many of the general practitioners do the operation when they could send the case to a specialist, but I am pleading for the remote districts.

When the general practitioner attempts to use the forceps, he may do harm, but in the operation I have described he is not likely to do any damage to the adjacent tissues.

THE DEGENERATE TONSIL.*

EDWIN PYNCHON, M.D.
Professor of Rhino-Laryngology and Otology, Chicago Eye, Ear, Nose and Throat College.
CHICAGO.

Ablation of hypertrophied tonsils is a procedure which has become generally indorsed by the profession of medicine, though in earlier years its advocates were less numerous and many sturdy opponents contended that the proper course to pursue was to patiently await Nature's cure by absorption or, as most often worded, until the patient would outgrow the trouble.

It is not strange, when even physicians indorsed such practice, that patients easily became converted thereto, particularly as the natural tendency is toward procrastination in matters pertaining to health. Eventually some of the more pronounced evil results due to enlarged tonsils became so patent that procrastination was forced to give way to operative treatment, though many of the lesser evils due to this cause, not being thus recognized, were neglected, and the patient later became a serious sufferer thereby.

Through the so-called process of absorption different results and structural formations follow in different cases, and hence in later years different forms of tonsillar mal-condition are met with. I have therefore employed the term "degenerate" to cover all of the ordinary or commonly-met chronic conditions of tonsillar disease, which classification would seem warranted by the fact that the same treatment, total tonsillectomy, is equally applicable to all and offers the only absolute and permanent cure obtainable.

One characteristic feature observed in the process of degeneration is that the protrusion becomes less and less pronounced, though, when the examination is properly made, it will be found that the diminished protrusion is largely due to a transformation into submersion. In other words, the bulk of tonsillar tissue has not been so materially lessened, though through the submersion the faucial space has become enlarged, hence a superficial examination can easily give the impression that Nature's cure has been effective.

During the process of submersion there is a gradual absorption of the hyperplastic or lymphoid element, and consequently a relative hypertrophy of the follicular element of the tonsil, and this evolution, which may progress for many years, is constantly accompanied by and undoubtedly produced through a low grade of chronic inflammation generally manifested by the discharge of a cheesy secretion from the crypts which is continuously taking place, and which, when most noticeable, is known as chronic lacunar tonsillitis.

While in early life the greatest bulk of the enlarged tonsil protrudes above the plane of the faucial pillars, and in rare cases is entirely above this plane, it is a fact in a very large majority of cases, in even the youngest patients seen, that as much of the tonsil is concealed by submersion and pillar attachment as is apparent through protrusion. This fact is often revealed after an ordinary tonsillotomy, when the remaining base is clearly visible, and through the eventual enlargement of this base we can easily account for the many reported cases of reproduction of the tonsil after a tonsillotomy.

In combination with the condition of tonsillar submersion there is generally present an adhesion of the anterior pillar thereto, which pillar is often hypertrophied and extends backward so as to constitute a covering over the tonsil to which has been given the name plica triangularis, but which I am inclined to regard as an anatomic name applied to a pathologic product, it being simply a hypertrophy of the mucous membrane of the pillar. The posterior pillar is also at times hypertrophied and adherent to the tonsil, and in some cases degenerated into a tissue having the same appearance and texture as the tonsil itself.

One of the earliest writers who called attention to the deleterious effects of the enlarged tonsil when not protruding was Yearsley, who, in a brochure on "The Enlarged Tonsil and Elongated Uvula,"[1] published in London over a half century ago, emphasized the pathologic importance of and the urgent necessity for thoroughly removing such tonsils, largely on account of their bulk, and therefore their mechanical effect on the eustachian tubes, thereby being a cause for ear disease. He says: "Sometimes when only a small amount of tonsillar disease exists it will occasion thickening of the contiguous mucous membrane of the eustachian tubes" (p. 41), and "in some instances when nothing morbid was visible in the throat the upper part of the tonsils has been of such magnitude as to produce deafness" (p. 38).

It will be apropos to quote his description of the nonprotruding tonsil, which reads as follows: "There is another variety of enlargement which I am not aware has ever before been noticed; it is where the diseased growth is confined to the upper margin of the tonsil, and which, from being hidden behind the veil of the palate and the anterior palatine arch, is quite out of sight when the throat is merely examined by the eye (p. 38). . . . In many instances the induration is altogether absent and the diseased glands are so soft as to break down repeatedly if grasped by a forceps (p. 17). . . . In adults a general thickening of the mucous membrane of the throat without any particular implication of the tonsils is often observed" (p. 10). Yearsley, in place of the tonsillotome, employed an angular bistoury, bent on the flat, whereby he claimed the entire tonsil could be cleanly dissected out.

After Yearsley for many years but little attention was given to the tonsil beyond the ordinary tonsillotomy for simple enlargement. Shortly prior to 1890 Bosworth,[2] Harrison Allen,[3] Maxwell,[4] Lennox Browne[5] and Roe[6] have all described various pathologic manifestations associated with diseased tonsils when "unattended by hypertrophy," and since 1890 many medical writers have dealt with the several mal-conditions of all of the tonsillar tissues and have suggested various methods of treatment, ranging from the expectant to the aggressive.

The pathologic importance of the supratonsillar fossa as a hotbed of pyogenic organisms, and of the so-called plica triangularis, so often adherent to the tonsil, whereby follicular debris is imprisoned, has been particularly described by Paterson[7] and Hartz,[8] who, through report of cases and otherwise, have given ample proof of their instrumentality in the production of various local and systemic infections. Among American writers Winslow,[9] Emil Mayer[10] and Packard[11] have all added their evidence to this proposition, combined with arguments which should be convincing, and Ullman,[12] in an elaborate paper in which the literature of the subject is

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

critically considered and 68 references cited, finds that the tonsil, being often diseased, is the "nidus for the growth and distribution of pathogenic organisms and their poisonous products in the system, and that many grave and fatal general infections have their origin therein."

It may be said, *en passant,* that the more submerged or deeply buried the base of the degenerate tonsil is the more diseased it will often be found to be. In the removal of such tonsils small, latent abscesses are frequently found at the deeper points, and their presence would naturally suggest the possible erosion of adjacent small vessels whereby infection might be drawn into the circulation and thus affect distant organs. Systemic infection also occurs through the course of the lymphatics.

Retained secretions in the supratonsillar fossa may, at any time, develop either a follicular tonsillitis, or a peritonsillar abscess, the form taken being influenced by the structural formation of the parts, or the direction of least resistance in any given case, and as the cellular tissue of the fossa often continues downward to varying distances in different subjects, a quinsy may develop at any point thus reached. In fact, the graver phlegmonous anginas are probably thus produced.

As the fossa becomes a cesspool for discharges from the superior tonsillar crypts it should, during a tonsillectomy, be thoroughly exposed and eradicated in order that the operation shall give perfect results.

Susceptibility to recurrent attacks of acute tonsillitis is probably the most annoying feature associated with chronically diseased tonsils, though a simple irritation or rawness of the throat, which goes no further, is more often observed. In fact, in a large majority of cases the patient is thoroughly unconscious of the presence of any tonsillar trouble.

The injurious effect on digestion due to the swallowing of diseased tonsillar secretions was observed by Yearsley (p. 35), and that such gastric disturbance is due to direct infection from germs in the naso-pharyngeal secretions has latterly been demonstrated by Turck.[13] Chronic bronchial catarrh as a result of drawing into the lung tubes morbific secretions from above was also noted by Yearsley (p. 35), whose teachings have been for many years apparently forgotten, though the same conclusion has, in recent years, been arrived at by others, and most notably by Ballenger,[14] who finds that catarrhal irritation of the lung tubes extends to the air vesicles and causes a thickening in the walls thereof which obstructs the osmotic action whereby the blood is both oxygenated and purified. In this way we see an explanation for impaired general health as well as for cough or asthma, should either be complained of.

As the fetid caseous tonsillar secretions, both by physical and microscopic examination, are richer in morbid material than is the usual post-nasal discharge, it seems warranted to give credit to the tonsillar secretions for the bulk of damage done the system through either the pulmonary or intestinal tracts.

Another result of the degenerate tonsil not infrequently observed is tenderness or swelling of the cervical glands. This latter symptom is regarded by McBride[15] as an urgent indication for a thorough tonsillectomy on account of the possibility of tubercular infection.

Submerged tonsillar tissue, whether the result of absorption or the aftermath of a tonsillotomy, occupies a material space, which may be roughly estimated at one cubic inch on either side, and is therefore a mechanical obstruction to vocalization, particularly as by binding together the faucial pillars free mobility of the soft palate is impaired so as to limit the maximum size of the posterior passage to the nasal chamber. Yearsley, at his early day, remarked that "when the morbid growth extends upwards and interferes with the motion of the soft palate, or encroaches on the cavities of the nose, the voice becomes nasal" (p. 23), and, furthermore, that with public speakers who are troubled with dysphonia "in nine cases out of ten the tonsils or uvula are the cause of the malady" (p. 22).

While many of the chronic diseased conditions of the tonsil possess individual characteristics under microscopic examination, the importance of differentiating the several varieties which have been described is much diminished by the fact that any and all of the simple chronic forms of tonsillar disease are equally amenable to the same treatment, viz., that of thorough eradication, and in my experience nothing less than this radical step is to be advised, as no patent argument can be advanced for the partial retention of a diseased gland, and the invariable beneficial after-results following a thorough tonsillectomy demonstrate the fact that the total loss of the faucial tonsils does not, in any way, impair the integrity of the economy.

In the examination of a throat wherein degenerate tonsils are present, a heightened color or increased redness of the fauces is first noticed, and an arched line leading downward on either side from the base of the uvula is invariably observed. This line curves downward on either side near the vertical center of the more or less hypertrophied anterior pillars, and quite clearly outlines the top and anterior edge of the submerged tonsils. The forward ends of the arched line are made more distinct by causing the patient to gag, at which time the line of demarcation between the red within and the pink outside thereof becomes more clearly visible.

While the patient is gagging the outlines of the submerged tonsil can be easily recognized through or beneath the anterior pillar, and by traction on the tonsil when grasped by a suitable forceps it can often be made to move about beneath the anterior pillar so its outlines can be seen to change. Pressure on the tonsil at this time with the finger, or with a suitable blunt instrument, will generally cause the escape of a muco-purulent secretion, or of "cheese balls," which, when flattened by pressure between the thumb nails, emit a fetid odor. Frothy saliva often covers the parts and with the new patient the fauces are generally hypersensitive, though the sensitiveness can usually be overcome by the frequent practice of a drill in faucial manipulations so that after a few days a sufficient tolerance is attained to permit of operative treatment.

As no tonsillotome yet made is efficient in completely removing the tonsil as usually met, and particularly in case of the submerged or degenerate tonsil with which this paper deals, other methods of operating have been practiced, as the use of the bistoury or the shears. It is not to be denied that a complete removal of the tonsil can be attained by either of these methods, though the unavoidable feature of hemorrhage necessarily interferes to a material degree with the thorough removal of all abnormal tonsillar tissue on account of its obscuring the field work. Additionally with the hemorrhage the anesthesia soon passes away when a local anesthetic has been employed. As the necessity for removing all of the follicular element is imperative in order to obtain the maximum benefit of the operation, I have for the past twelve years been using the electrocautery as the dissecting instrument instead of the bis-

toury, and I, in this way, obtain the following advantages, viz.:

1. A practically bloodless field so all of the diseased tonsillar tissue can be cleanly removed.

2. Owing to lack of hemorrhage no loss of the local anesthetic.

3. By the cauterization a destruction thereof should any portion of the follicular element escape the line of dissection.

The time limit will not permit of my describing in this paper the steps of the operation which has been elsewhere described at different times (see Bibliography, Nos. 16, 17, 18, 19 and 20), and which I have employed on more than a thousand occasions.

By this method of operating the tonsil generally peels out with facility, and often bloodlessly, the incisions being as though cutting through cheese, though in some cases sclerotic tissue is encountered which gives a sensation more like that of cutting leather. I might add that in the removal of an enlarged fibrous tonsil, the form of tonsil in which fatalities from hemorrhage after an ordinary tonsillotomy have been most often reported, this method of operating by "electro-cautery dissection" gives the greatest promise of immunity from that complication as the line of incision is outside of the area of sclerosis.

My results have been ideal and have generally yielded a throat with fauces pink instead of red, a throat with mobile and approximating pillars, which with vocalists has enhanced the high register by two or three notes, and a throat the tonsillar region of which is never afterward the source of pain or discomfort to the patient. Furthermore, there has generally been an improvement in the nasopharyngitis, and in the tubal catarrh should such conditions have previously existed, and the same may be said concerning gastrointestinal disturbance or chronic bronchial catarrh, and lastly with singers there has followed a diminished tendency to recurrent laryngitis. It will, of course, be understood that all deformities or troubles of the nose or nasopharynx, when such were present, were also corrected.

BIBLIOGRAPHY.

1. James Yearsley: London, 1842.
2. "Compte-Rendu," Copenhagen, vol. lv, p. 54.
3. Medical News, vol. xii, p. 31.
4. Med. and Surg. Reporter, Feb. 16, 1889.
5. The Throat and Its Diseases, London, 1887, 2d Ed., p. 335.
6. The N. Y. Med. Jour., Oct. 26, 1889.
7. The Laryngoscope, July, 1898.
8. American Medicine, April 19, 1902.
9. Maryland Med. Jour., May 13, 1899.
10. THE JOURNAL A. M. A., Dec. 2, 1899.
11. Phila. Med. Jour., April, 1900.
12. The Medical News, Jan. 26, 1901.
13. N. Y. Med. Jour., Nov. 23, 1895.
14. Medicine, November, 1897.
15. Diseases of the Throat, Nose and Ear, Edinburgh, 1900, 3d Edition, p. 60.
16. THE JOURNAL A. M. A., Nov. 22, 1890.
17. The Laryngoscope, February, 1897.
18. International Jour. of Surgery, June, 1898.
19. Chicago Med. Recorder, August, 1898.
20. Annals Otol., Rhinol. and Laryngol., November, 1898.

103 State Street.

DISCUSSION.

DR. J. F. BARNHILL, Indianapolis—Until recently a large per cent. of the tonsillotomies, even by men in the specialty, were imperfectly done for the reason that the instruments used were nearly all some kinds of tonsillotomes. The class of cases which Dr. Pynchon described in his paper is one in which the tonsillotome can not be successfully used. If one attempts to use this instrument in such a case, he simply cuts off the top of the tonsil. I have been in the habit of classifying tonsils into two very broad divisions: one in which we remove the glands for the reason that they produce obstruction to breathing, and the second in which we remove them because they have infected pockets and are, therefore, the source of periodic or possibly constant inflammation.

Coulter removes part of a tonsil at a time, with electricity, dissecting it away. These tonsils are always adherent, and my method has been to dissect them away from the pillars by electricity, so they can be lifted out easily, and then snare them away en masse. It is to me much easier and quicker; possibly to Dr. Pynchon it might not be. I have never followed the method of removing a part at a time and thus extending the operation over some thirty or forty days, as has been described by Dr. Coulter. I have always removed them at once and I have never had occasion to regret doing the entire operation at one sitting. I believe the value of the method described here comes not only from removing the tonsil crypts but also from the fact that we free the pillars of the fauces, which are muscular organs, and thereby we give greater freedom to the organs of voice.

DR. ALBERT H. ANDREWS, Chicago—Dr. Pynchon is the originator of this plan of operation. Dr. Coulter's description and use of the method was several years later than Dr. Pynchon's first publication of it. In the classification of chronically-diseased tonsils three divisions is all that seems necessary: first, simply inflamed tonsils; second, hypertrophic tonsils; and third, atrophic tonsils. This classification is in accord with the well-known pathologic changes resulting from chronic inflammation in other parts of the body. In the first division, the simple inflammation, the blood-vessels are congested and the tissues engorged, but there is no structural change in the tissue. In the second division there is a proliferative change in the tissue, and in the third division the connective tissue is contracted and the lumen of the vessels is lessened, and with the lessening of the blood-supply there comes atrophy. The third division is the degenerate tonsils Dr. Pynchon mentions. In removal of the tonsils I have not used the method Dr. Pynchon describes because I have not as yet had occasion to find any fault with the method I have been using. If I believed Dr. Pynchon's method better, taking all things into consideration, the pain produced and the time it is necessary to subject the patient to the discomfort of that operation, I would use his method. To my mind, however, it is not justifiable. My method is first to liberate the tonsil from the anterior and posterior pillars. I pass an angular knife down first between the tonsil and the anterior pillar. Adhesions between the tonsil and anterior pillar are usually more pronounced than between the tonsil and the posterior pillar. After the tonsil has been liberated from the pillars, I care not how deeply submerged it may appear to be, if it is caught by a double tenaculum forcep, it can be pulled outward from between the pillars and cut off. I sometimes use scissors and sometimes a tonsilotome for this purpose. As regards pain and hemorrhage, if pledgets of cotton saturated with a solution of cocain are pushed into the crypts of the tonsil and around behind the tonsil for a few moments, and then pledgets of cotton introduced into the crypts saturated with adrenalin, the hemorrhage will be exceedingly slight and the pain hardly worth mentioning. I wish to speak against the method which I would call "tonsil snatching." There is no necessity for hurry in these cases. If the patient is a child and will not hold still so you can do the right kind of operation, give him an anesthetic and operate with care. Thorough removal of the tonsil will be followed by satisfactory results, whether the removal is accomplished by scissors, tonsilotome or the galvanocautery. I was struck with one statement Dr. Pynchon made, that if portions of the tonsils were accidentally left the cautery would destroy them. If the cautery will destroy the base of a tonsil accidentally left why will it not destroy adjacent normal tissues when the entire tonsil has been removed?

DR. D. A. KUYK, Richmond, Va.—Those of us who have read Dr. Jonathan Wright's articles on the effect of the electro-cautery on the nasal mucous membrane, for he says the effect of the cauterization is so great, extending so far beyond the point cauterized, entirely beyond our power to limit it to any given surface or area, would hesitate before ablating the tonsil with the electro-cautery. The large area cauterized might cause subsequent cicatricial contraction with no means in our

power to limit it, involving perhaps the palatine pillars causing perhaps alteration in vocalization that might be most unfortunate in singers, elocutionists, public speakers, etc. I have a case in point in which this very effect resulted.

Cicatrization caused contraction between the anterior and posterior pillars; they were twice severed, but recurred, the patient declined any further treatment and left with considerable impairment of the voice. This result may have been my fault, but every possible precaution was used, everything was done to stay the cicatricial contraction, but nothing availed.

DR. WILLIAM L. BALLENGER, Chicago—I have seen probably 25 per cent. of Dr. Pynchon's cases, in all stages of operation, and I have seen him operate. I have seen a number five, six or seven years old, and I will say I have never seen any results that compared with those obtained by Dr. Pynchon. He gets the most beautifully clean-looking throat I have had the pleasure of looking into. There is no evidence of undue cicatricial formation. Judged by its results, it is certainly an ideal method. But I have not felt inclined to use it extensively because it requires from four to six sittings to remove two tonsils, and there is considerable inflammatory reaction in some cases; in others there is very little. If one should, in the course of the operation, burn the muscular fibers of the anterior or posterior pillars, there might be some serious complications interfering with the use of the voice. It seems to me that accident would result only from the lack of experience in the use of the method. In none of the cases I have seen has that resulted. My own method for the complete removal of the tonsils, which I prefer in adult cases and in the cases which Dr. Pynchon has denominated the submerged cases, is to dissect them out with the knife. If the adhesions are not extensive this is an easy matter. Often I find the adhesions very extensive, not only in the region of the posterior and anterior pillars but in the pharyngeal aponeurosis as well, and in some of those cases it requires considerable care to separate the adhesions. But it can be done and the tonsil removed very completely. If there are no adhesions, then the tonsil can be enucleated practically with a dull instrument, such as the handle of the knife, for instance. Dr. Beck was present when I removed a tonsil in this way. It leaves a smooth pocket and probably would give results as good as Dr. Pynchon has secured. By this method I can remove two tonsils at a sitting and save my patients and myself considerable work and some pain. I have used cocain anesthesia in this operation, the strength of the cocain solution ranging from 10 to 20 per cent. With the 20 per cent. solution, however, I have had in a few cases considerable cocain poisoning. Usually I do not use a solution stronger than 10 per cent. As a rule the patients say it does not hurt or that it hurts very little.

Tonsils are removed for other purposes than because they are degenerated or adherent or for the purpose of improving the voice. The posterior pillar is the palato-pharyngeus muscle, that is, it contains this muscle, the fibers of which extend up to the mouth of the eustachian tube and control more or less the patency of the tube, and so we may remove the tonsils to improve tubal and middle-ear disease as well as to improve the voice. Mackenzie and Curtis have said that they never observed anything but improvement of the voice from removal of the tonsils. I certainly have not, and some of Dr. Pynchon's patients who were singers, declare that they have only secured a good effect in this way. I would only say of his method that it probably requires more skill than some of the other methods, but nobody could get better results than Dr. Pynchon obtains.

DR. J. C. BECK, Chicago—Dr. Pynchon and I work almost side by side, and have worked for two years in the same clinic. I see his cases often and know his results. I am asked by the students often about his operation, and in order to be able to answer intelligently I have done his operation a number of times. After he has operated—and he has operated on a considerable number of physicians—his patients come back and say that they have been benefited very much. That is a good while after the operation. For the first week the patients, including the physicians he has operated on, complained bitterly of the pain from the operation, whether it was done in one sitting or two. The reaction following the use of the cautery is very marked. There are symptoms of sapremia that make the patients very ill. The results from the operation, nevertheless, are good.

The Doctor removes the pillar. He says part of the pillar is degenerated with the tonsil and should be removed. I have satisfied myself that this part of the pillar has some use, and I do not remove it. It has muscular fibers in it, and I am opposed to its removal. I have seen cases the Doctor has operated on, in which the posterior pillar was very much hypertrophied, probably from taking on some of the action of the anterior pillar. Sometimes a layer of the pillar comes over the anterior surface of the tonsil and may be mistaken for the pillar, it is the plica tonsiluris, and its removal, aside from that, is a tedious, unnecessary operation. Dr. Pynchon teaches his pupils to do the operation very easily, but it requires considerable teaching of the patient so that he may hold the tongue depressor, and the constant holding and the fight they make in doing the operation sometimes is very annoying. I treat these degenerated tonsils by slitting the ducts. By this I often do not succeed, but sometimes there is very great amelioration of the symptoms. For the removal of them I use punch forceps much similar to Dr. Myles' punch, only it is square, and I excise the tonsils with knife or scissors. One thing in favor of cauterization is the prevention of bleeding. It has been said that the bleeding is not much, and that the adrenalin, etc., will stop it, but sometimes it is considerable, and if the use of the cautery will avoid this danger it is something in its favor.

DR. G. HUDSON MAKUEN, Philadelphia—One of the speakers has said that Dr. Pynchon advises an operation extending to the removal of a portion of the anterior pillar, but I have not understood this from his paper nor from his previous writings. The opercular fold is not a part of the pillar, although it has muscular fibers in it. It is a part of the tonsil rather than of the pillar. The removal of any portion of the anterior palatoglossi muscles would be bad surgery, for it would change their length and thus interfere with their natural functions. I would like to ask Dr. Pynchon what he does with the opercular fold, which sometimes forms a mass larger than the tonsil itself. I have sometimes removed it. It is very vascular and it contains muscular tissue.

DR. P. J. GIBBONS, Syracuse, N. Y.—Tonsils that often are removed may be treated conservatively by stripping them from adhesions to the pillars and then treating with iodin, camphor menthol or nitrate of silver. Bosworth has told us that the tonsils never will bleed too much, therefore let them bleed. Later Bosworth got up a snare for the removal of the tonsils, evidently he must have thought there was reason for it. I tried chopping everything off. But I saw some hemorrhages that were rather alarming. Then I used a tonsillotome, which I first dulled. If you are going to take out the tonsil by piecemeal, you can do it with the snare, and still better with the cautery. If you want to remove the entire tonsil with the cautery there is everything in knowing how to use the electrocautery. Of course, an inexperienced man might do a great deal of harm in this way. I would encourage a little conservatism in removing the tonsil. Sometimes it is sufficient to remove it only partially. I refer now to the small tonsil that we may retain. There is a function for everything in the body, even the appendix, more than for the surgeon to operate on.

DR. GEORGE F. KEIPER, Lafayette, Ind.—We ought always to remember, in removing the tonsil, no matter what method we use, if we get the bottom of the crypts we will accomplish everything desired in its removal. I have been doubtful in the cases of alleged total removal of the tonsil that I have seen as to whether the tonsil has been entirely ablated. I have, however, never seen any of Dr. Pynchon's results.

DR. EDWIN PYNCHON, Chicago—Owing to the time limit I did not attempt to describe the operation in my paper or touch on the technic thereof. I have, however, brought with me the instruments I use, which it may interest you to see. In the

cautery handle I have the contact arranged on the outside so that it may be readily kept clean. I have had the ends of the electrodes made large so that the electrode is held more firmly in the handle. Platinum is not so good, I have found, as iridoplatinum, which you may heat red hot and it will still retain its shape. These electrodes and the handle are made by F. A. Birtman & Co. of Chicago. I have here also a tongue depressor which enables the patient to hold down his own tongue. And here are some forceps I find very convenient for grasping the tonsil. Several of the objections made by the gentlemen were already met in the paper which they did not hear, as they came in too late. Dr. Myles, this morning, mentioned the inefficiency of the tonsillotome in removing the tonsils. If any of you desire to become familiar with this operation, I will take great pleasure in sending you a description thereof in a reprint. It was not the purpose of the paper to deal with the enlarged tonsil, which is of annoyance chiefly as an obstruction. Its follicles are very small, and it is simply an obstruction, and that is all. Follicular hypertrophy is found in the degenerated condition of which my paper treats. As to Coulter and myself, I reported the operation in 1890, and Dr. Coulter, I believe, began doing the operation about five years later and has become quite enthusiastic over his results. He has done good work. One of the physicians thought it was a septic inflammation which follows the removal of the tonsil in this way; it is not a septic condition, but a burn; an eschar made to keep out sepsis. After the operation I apply a 20 per cent. solution of nitrate of silver and thus make a coating over the wound. I originally took out the entire tonsil at one sitting and sometimes had hemorrhage therefrom. Now, since dividing the operation in two steps, I do not have much hemorrhage. Anybody who does radical work on the tonsil will have an occasional hemorrhage. The hemorrhage I got was chiefly a capillary hemorrhage. There was no point of spurting. I found the motion of the tongue assisted somewhat in the production of hemorrhage, so I took out one half of the tonsil at a time. The greatest amount of expertness is required in removing the upper half. There is hardly any hemorrhage from removing the lower half, nor is there much pain. Nowadays, when I see a little bleeding point, I cauterize that point and apply nitrate of silver. In this manner I can do a practically bloodless operation. Most of the bleeding is where the forceps take hold of the tonsil, to pull it out of its bed, but this amounts to only a few drops. The after-effect of the cocain may cause some secondary hemorrhage, but now I generally avoid that. The time required for the operation depends largely on the dexterity of the operator. I have taken out an entire tonsil in two and a half minutes. I have frequently taken out the upper half in from one and a half to two minutes. I usually work for half a minute and then rest a minute, and then work again for half a minute. In these cases the follicular element is hypertrophied. Dr. Kuyk mentioned something entirely apropos, and that is the matter of cicatricial contraction. I have once in a while had slight cicatricial contraction. I have found if before I operate the anterior pillar is adherent to the tongue that it becomes reattached later on. If the anterior pillar is not attached at the start it does not become attached after the operation. If you make the incision longitudinally in the muscle you will not get contration; but if you make the incision across the muscle, you may get contraction. In regard to the cases sent to Dr. Ballenger for inspection they were not picked cases. I sent him several cases operated on from three or four to as long as ten years ago. In regard to the use of the angular knife of Yearsley I do not think that the tonsil can be entirely removed with the knife, because bleeding obscures the field so one can not get all the follicular element in that way. I learned that the submerged tonsil was very much buried beneath the anterior pillar so after its removal there was left a hole which would retain secretions, therefore I began to take away more and more of the pillar. You see, gentlemen, this operation is the outgrowth of experience and trial. What I take away is principally mucous membrane of the pillar. After the wound is healed one can not see that any of the anterior pillar has been sacrificed. The part of the pillar I remove is the posterior edge of the anterior pillar. As to cocain, I have never had a prostration from the application of cocain to the fauces when applied with the cotton applicator. I always add from 5 to 10 per cent. of phenol to my cocain solution, and that may have something to do with it. I formerly used stronger solutions of cocain, but now I frequently get good results from a 10 per cent. solution. I have sometimes used hypodermatic injections of cocain in the pillars. It does not do any good to inject cocain into the tonsil, but it must be injected into the pillars, and preferably under the mucous membrane, so as to produce a bleb, but I have had some intoxication from so doing. By making applications of a 10 per cent. solution and taking plenty of time, I generally get good anesthesia, and I have fancied that the tendency to hemorrhage has been less than when stronger solutions were used. As to the line of demarcation, you will at first find a general redness of the fauces, but if you make the patient gag it will lighten up the anterior part and darken the posterior part, so the line of demarcation shows up clear and distinct, it being directly over the anterior edge of the diseased tonsil. In practice I find the burn causes no harm to the pillar at all, and I make the incision while the patient is on the gag. I remove all of the diseased tissue, and with the after-treatment the wound heals up properly. During the time of healing I insist on the patient returning regularly so I can massage the wound. There is a tendency for connective tissue to form in the wound so it fills up irregularly, therefore I massage it so as to make it heal up solid from the bottom. I fully agree with Dr. Gibbons as to the desirability of getting rid of a diseased tonsil. The total loss of a tonsil does the economy no harm. It is bad surgery to partially remove a diseased tonsil.

DR. BARNHILL—If you could dissect the tonsil loose and remove it as completely with the snare, would you still prefer your method?

DR. PYNCHON—I want to do the operation in a bloodless manner, if possible, and I can do that better with the hot point. After dissecting the tonsil loose so that it is ready to come out, which would be the better to do: to put on the snare or to simply complete the removal with the hot point? What is the use of changing then to the snare? In a very sensitive patient or a child I may use a tonsillotome to clip off the partially loosened piece, but that is the only time.

OTITIC BRAIN ABSCESS.

REPORT OF TWO CASES: APHASIA IN ONE, RECOVERY.*

GEORGE F. KEIPER, A.M., M.D.

Eye and Ear Surgeon to St. Elizabeth Hospital, St. Joseph Orphan Asylum, Indiana State Soldiers' Home, Children's Home; Lecturer on Eye, Ear, Nose and Throat to Training Schools for Nurses at St. Elizabeth Hospital and Indiana State Soldiers' Home.

LAFAYETTE, IND.

CASE 1.—May 7, 1900, through the kindness of Dr. A. B. Westfall, I was called to see John S., aged 18, who had been taken to St. Elizabeth Hospital. He had suffered with the left side of his head for a month. His condition was as follows: His temperature was 102; pulse, 124; extreme prostration was manifest and his general appearance indicated extreme pyemia. The left ear was discharging. The mastoid was tender to the touch. His tongue was covered with a brown fur and his teeth with sordes. The patient was perfectly rational and answered questions intelligently; no examination was made for aphasia because of the patient's extreme condition. Because of this an immediate operation was agreed on.

At 11 a. m., with the assistance of Drs. Westfall, Throckmorton, White, Morrison, Lee, Hillis and Hopper, the operation was begun in the usual way. The periosteum was scraped aside. When the trephine was applied over the site of the mastoid antrum and given two turns it suddenly sank into the bone. Removing it with the button of bone we saw the whole bone necrosed and filled with granulations and with the most

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

offensive pus of a greenish hue. The bone was so rotten that all debris was removed by a sharp spoon only. The tegmen between antrum and brain cavity was also necrosed. This was removed and the dura opened. After cleansing the cavity in dura and bone the wound was packed, drained and dressed.

MAY 7.

At 1:30 p. m. the temperature dropped to 98, and pulse to 94.
At 3:30 p. m. it was 101.4 F., and pulse 92.
At 5:00 p. m., 101.2 F., P. 96. At 9:30 p. m., 103.6 F., P. 120.
At 6:30 p. m., 103.4 F., P. 105. At 11:00 p. m., 104 F., P. 106.
At 8:30 p. m., 104 F., P. 124.

MAY 8.

At 1:45 a. m., 102 F., P. 104. At 10:50 a. m., 103.6 F., P. 130.
At 5:00 a. m., 102 F., P. 106. At 12:15 p. m., 103 F., P. 94.
At 7:00 a. m., 103.2 F., P. 102. At 2:00 p. m., 104 F., P. 100.
At 8:45 a. m., 103.8 F., P. 104. At 4:45 p. m., 103 F., P. 94.
At 9:45 a. m., 104.2 F., P. 130. At 7:25 p. m., 104.6 F., P. 104.

Because of the pulse and temperature it was felt that a further exploration of the brain cavity should be made. At 8:30 p. m., with the same physicians assisting, the wound was reopened and the skin incision was continued upward and the bone beneath skin and periosteum was removed by rongeur to the extent of a square inch. The dura was black and necrotic. This was opened after ascertaining that it was loose as far around as a probe could be passed between dura and bone. The temporosphenoidal lobe was necrotic. The pus was as offensive as ever. The lateral sinus and jugular were free. After cleansing the brain cavity as carefully as possible it was drained with gauze and the wound dressed. The patient was put to bed at 9:25 p. m., when the temperature was 102 and pulse 98.

MAY 9.

At 12:30 a. m., 102 F., P. 98. At 12:30 p. m., 102 F., P. 101.
At 3:10 a. m., 101 F., P. 98. At 3:30 p. m., 101.8 F., P. 100.
At 5:00 a. m., 100.6 F., P. 96. At 6:00 p. m., 103.6 F., P. 112.
At 7:45 a. m., 100.8 F., P. 94. At 9:30 p. m., 103.4 F., P. 110.
At 10:00 a. m., 104.4 F., P. 113. At 12:00 m., 102 F., P. 106.

MAY 10.

At 8:00 a. m., 102.4 F., P. 110. At 3:00 p. m., 99.2 F., P. 100.
At 5:30 a. m., 103.4 F., P. 112. At 7:00 p. m., 99.2 F., P. 100.
At 9:00 a. m., 102.6 F., P. 114. At 11:00 p. m., 98 F., P. 118.
At 12:00 m., 100.8 F., P. 114.

MAY 11.

At 2:00 a. m., 101 F., P. 124. At 1:45 p. m., 99.2 F., P. 124.
At 6:00 a. m., 101 F., P. 120. At 5:30 p. m., 101.6 F., P. 135.
At 8:00 a. m., 100.4 F., P. 116. At 9:00 p. m., 103 F., P. 125.
At 10:00 a. m., 100.8 F., P. 116.

MAY 12.

At 1:00 a. m., 104.6 F., P. 144. At 2:00 p. m., 102.6 F., P. 140.
At 5:00 a. m., 103.4 F., P. 140. At 5:35 p. m., 101.4 F., P. 140.
At 8:15 a. m., 103.6 F., P. 150. At 9:35 p. m. 102.8 F., P. 130.
At 11:00 a. m., 104.4 F., P. 140.

MAY 13.

At 1:00 a. m., 103.4 F., P. 132. At 12:00 m., 105 F., P. 150.
At 4:00 a. m., 103 F., P. 132. At 6:00 p. m., 104.4 F., P. 158.
At 6:00 a. m., 103 F., P. 132. At 10:35 p. m., 102 F., P. 145.

MAY 14.

At 1:30 a. m., 103.2 F., P. 145. At 1:30 p. m., 104.4 F., P. 158.
At 6:00 a. m., 103 F., P. 145. At 4:30 p. m., 103 F., P. 165.
At 9:00 a. m., 104.2 F., P. 144.

The patient died shortly after this. The respirations were hurried in proportion. Several injections of anti-streptococcic serum were of no avail. Nuclein was also tried with a similar result. The patient could not retain food either by mouth or rectum. Normal saline injections per rectum were rejected. Then they were tried subcutaneously. Wherever introduced the skin sloughed markedly. The odor was so frightful that in dressing the wound every three or four hours it was necessary to stop one's nostrils until we used equal parts of oil of eucalyptus and menthol in the wound, which was suggested by Dr. McMahon, who received it from Dr. Ida Levering of Secundrabad, India. This controlled the odor beautifully and removed the disagreeableness of dressing the wound so frequently.

The remarkable feature of this case was the fact that his mental faculties were unimpaired to the very last, notwithstanding the extensive destruction of brain tissue.

CASE 2.—July 26, 1901, through the courtesy of Drs. Hillis and Thompson, I was asked to see F. M., aged 37, a traveling salesman, who had a running ear, which had troubled him for a month, together with a tenderness over the mastoid. Before coming to Drs. Hillis and Thompson an icebag had been applied continuously in the hope of curing the trouble. The left ear was discharging profusely, but the mastoid was not tender, except slightly over the supposed seat of the artrum. The patient's general condition was poor. He suffered much frontal headache, chilliness with flashes of heat and mental hebetude. The temperature as in intermittent fever. The pulse was slow. The ear was immediately cleansed, dryed and filled with dry boric acid powder. A Japanese pocket stove was applied over the mastoid. The general treatment consisted of calomel purge and quinin sulphate grs. 3 every three hours. He was impressed with the gravity of his condition. July 27 found him no better. July 28 the symptoms of mastoiditis were still present, with marked headache, mental dulness, vomiting and rigors.

Operation on the mastoid was proposed and the patient accepted the advice. All the usual preparations were made, and with the assistance of Drs. Hillis, Beasley, Throckmorton and Bartholomew the mastoid process was opened in the usual way. However, we found the antrum located one-half inch above the place where we usually expect to find it. It was filled with pus and cholesteatomatous masses, and the detritus of dead bone. The tegmen was eroded. The bone was thoroughly cleaned out. Then the brain cavity was explored, but no evidences of pus were found. It may be that at the time the abscess was small or the needle of the aspirator did not penetrate it or the needle may have gone clear through it. However, no further efforts were made to find the abscess. The wound was dressed and the patient put to bed at 10:40 a. m.

He did fairly well until August 15. However, in the meantime he still complained of headache. Kenyon's neuralgic tablets gave only a partial relief. In the afternoon of the above date he lapsed mentally, and when I reached his bedside he could only say: "I hope I'll be better, doctor." He thus continued until evening, when he lapsed into unconsciousness. In this condition he was taken to the operating room at 9:40 p. m.

The wound was reopened, and with the assistance of Drs. Thompson, Davidson, Throckmorton and Bartholomew, the wound in the bone was enlarged by the removal of a square inch over the temporosphenoidal lobe. The dura bulged. Inserting a small trocar and attaching the aspirator, we were rewarded by finding pus. This was evacuated to the extent of two ounces. The dura was opened, the cavity cleaned and dried and a drainage tube inserted. The wound was then closed and dressed.

At 11:30 he was put to bed, and at 12:30 a. m. he awoke partially conscious. At 3 a. m. he asked for a drink and was rational at times. When visited in the morning he was partially rational, but his memory for a great many things was gone. He could not remember my name, and could not call the names of close friends or things about the room. He realized his deficiency, and remarked that it was strange that he could not recall the name of things which he saw. Still the burden of his conversation was that he hoped to be better soon. His temperature was normal and his pulse was 74. He complained of no pain in his head. By the 17th he was able to write my name, though he could not call it.

On the 18th his pulse slowed down to 64, with a temperature of 101.6 F. at 11:15 p. m. It continued thus on the 19th. He was dull mentally. At 8 p. m. we concluded to put him on the table again. Examination of the wound showed drainage to be somewhat indirect. The wound was reopened and some more bone removed posteriorly. Then the drainage tube drained directly outward. He was returned to his room at 9:40, with a temperature of 98 F. and a pulse of 80. Since then his recovery has been gradual, but perfect.

The patient manifested marked aphasia. In making up the description of his case I will follow the plan of Bastian, as given in the report of a case similar to mine by Drs. Jack and Walton[1] of Boston.

A.—Preliminary qualifications.

1. Patient is right-handed.
2. No paralysis of face or limbs.
3. He is a traveling salesman, well informed.

1. Boston Med. and Surg. Jour., Dec. 26, 1901.

B.—Activity of auditory word center and glossokinesthetic center, with afferent commissural and emissive fibers.

4. Patient deaf on left side only.
5. Recognizes and appreciates ordinary sounds and noises.
6. Comprehends simple speech; obeys orders, but does not know names of objects previously familiar.
7. Spontaneous speech impaired. Uses word "business" when he can not remember real name of object.
8. Can not name days of week and months of year without coaching.
9. Can repeat short sentences uttered to him fairly well only.
10. Has no musical ability.
11. Has no musical ability to carry a tune.

C.—Activity of visual word center and cheirokinesthetic center with their afferent commissural and emissive fibers.

12. Sight good.
13. Recognizes simple printed words.
14. Recognizes individual letters and numerals.
15 and 16. He can read his own writing after making it.
17. Recognizes common objects but can not call their names. Calls all alike "business."
18. Does not recognize gestures.
19. Writes only fairly well.

Symptoms.	Mastoiditis.	Brain Abscess.	Lepto- and Pachy-meningitis.	Sinus Thrombosis.
Pain in ear	Mark'd with swelling of posterior-superior wall of auditory canal.	Usually severe		
Pain in head	Mastoid tender to pressure and percussion.	Often frontal and very severe	Rarely absent; early and severe	Tenderness over mastoid and sigmoid sinus.
Temperature	Normal or but slightly elevat'd	Rarely elevated except in extremis	Elevated; flushing of face	Very high; fluctuating markedly.
Pulse	Normal	Slow	Rapid	Rapid; fluctuating.
Respiration	"	"	Cheyne-Stokes	" "
Vomiting	None	Often present in first stages	Rarely absent	In early stages.
Digestive system	Constipated; tongue may be coated.	Constipation; tongue coated; breath offensive.	Great thirst; loss of appetite; abdomen retracted.	Diarrhea; severe abdominal pain; tongue dry and coated; may simulate typhoid.
Mentality	Normal	Cerebration may be slow	Delirium; irritability; extreme restlessness.	Normal.
Drowsiness	None	After week of pain		None.
Shivering	"	Usual	Generally present, but not so marked as in sinus thrombosis.	Rigors are very frequent.
Giddiness	"	Often, especially in cerebellar abscess.	In early stages	Sometimes observed.
Local rigidities	"	None; retraction of head in cerebellar abscess.	Often observed; retraction of head	Convulsions may be local or general
Aphasia	"	Sometimes present	None	Not observed.
Coma	"	In last stages	In last stages	In last stages.
Ocular apparatus	Normal	Photophobia; pupils contracted; optic neuritis; blindness with dilated pupils in cerebellar abscess.	Pupils sluggish; optic neuritis	
Discharge from ear.	Usually purulent	Often present		Often present.
Emaciation	None	Marked; rapid and progressive	None	May be present.
Pulmonary symptoms.	"	None	"	Often present; due to infarcts; prune-juice expectoration; jugular vein may be involved.

20. Can write his own name, the name of his physician (though he can not call it aloud). Knows location of a physician's office, but can not call his name, though acquainted with him.
21. Copies well, though he uses word "are" for "or."
22 and 23. Copies numerals and can make calculations.
24, 25 and 26. No tests in reading and writing music.

D.—The associated activity of three centers with commissures between auditory and visual word centers or other sets of afferent and emissive fibers.

28. Reads perfectly simple words, but not difficult ones.
29. Can name at sight letters and numerals.
30. Can not name at sight many common things, such as his victuals.
31. Can point to common objects whose name he hears.
32. In writing "A, B, C" he makes "1, 1, 1."
33. As above.
34. Can not play musical instruments.

The patient has made a good recovery. The last defect in writing to disappear was the substitution of the word "are" for "or."

VARIETIES OF APHASIA.

This brings us to a brief study of aphasia. As Dana well says: "Aphasia is a disorder of the faculty of language; and it has a number of varieties, in accordance with the particular part of the brain involved and the particular portion of the mechanism of this faculty that is destroyed." Memory, of course, is involved in this process. Nordau in his work on "Degeneration" has beautifully given us the idea that memory is nothing but stored up nerve-cell action. The forms of aphasia are:

1. Word blindness (alexia). The patient can see and spell the letters of a word but can not read.

2. Sign blindness (apraxia), when the subject can not understand the meaning of signs as he once did.

3. Both of these combined make mind blindness, because the patient can not understand what he sees.

4. Word deafness. What the patient hears is, as it were, in a foreign language.

5. Motor aphasia, which is manifested under aphemia, i. e., where the patient knows what he sees but can not express by the organs of articulation what he sees. Our patient had to learn again after a painful process to pronounce the names of common objects around him. Motor aphasia is also manifested under agraphia, i. e., where the patient can not use his muscular apparatus in writing what he sees, though again he knows the names of what he sees.

6. Conduction aphasia. The patient can write or speak but is confused in his expression.

7. Then the patient may manifest a combination of the above, and this is called mixed aphasia.

The parts involved in aphasia are:

1. Conductive aphasia—island of Reil.
2. True motor aphasia—Broca's convolution.
4. Word deafness—first temporal convolution of left side.
5. Word blindness—occipital lobes.

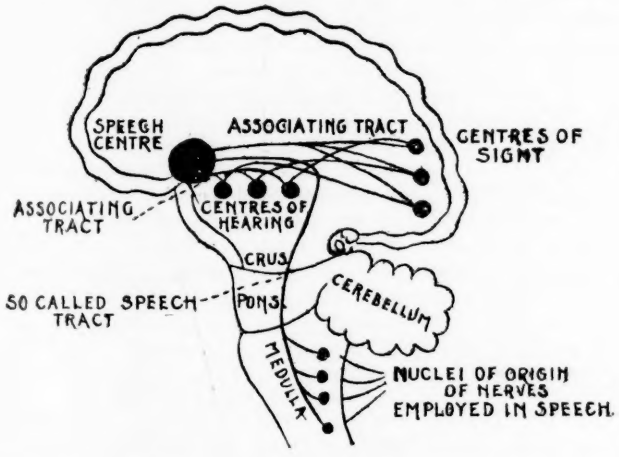
ETIOLOGY.

Consideration of the etiology of brain abscess involves consideration of the anatomy of the temporal bone in its relation to the middle cranial fossa and to the lateral sinus. The plate of bone between the mastoid antrum and cranial fossa is very thin, quite translucent in fact. The plate between the sigmoid sinus and antrum is but a little thicker. Neither is as thick as the external plate of bone. Pus traveling in the direction of

the least resistance, when the aditus ad antrum is closed, or partially so, must involve the brain tissue or lateral sinus before it can erode through the external wall of the antrum, though in several instances the writer has found sinuses from the outside leading into the bone at or near the foramen for the emissary mastoid vein. The tegmen may be in a living state and yet the blood vessels running through it may spread infection to the brain itself. In the involvement of the lateral sinus the purulent matter may erode the bone and infect the sinus thus; the slowness of the blood current in the sinus facilitating the process. When the sinus becomes thrombosed in its whole extent the infection naturally spreads to cerebellum.

PROGNOSIS.

Before the appearance of that classic of MacEwen on "Pyogenic Diseases of the Brain and Spinal Cord" but little was attempted except in a medical way. Patients usually died. MacEwen's experience with cerebral abscess shows that of nineteen cases operated on, eighteen recovered. In thrombosis of the sigmoid sinus of seventeen cases operated on, thirteen recovered and four died. In extradural abscess he lost none of the five cases on which he operated. In the report of seventy-four operations he had deaths only in the following: five from pyogenic cerebrospinal leptomeningitis, one from abscess of the frontal lobe, one from meningo-encephalitis of the frontal lobe, one from total necrosis of the temperosphenoidal lobe and four from thrombosis of the sigmoid sinus, making only twelve deaths in a disease hitherto regarded fatal. If the surgeon can get the case before the process has extended to the adjacent structures of the mastoid antrum, the operation of opening and cleaning out the mastoid is almost universally successful.



In my own experience it has been my good fortune to have saved all my uncomplicated mastoid cases. In addition to the death above described, the writer has had only three others: two in which the lateral sinus was badly involved and one where the patient died five weeks after the operation with what the consultants and myself agreed to be tubercular meningitis. The patient was a negro with tubercular tendencies.

SYMPTOMS.

The table herewith subjoined gives at a glance comparatively the symptoms of mastoiditis, brain abscess, lepto- and pachy-meningitis and sinus thrombosis. It also gives at a glance the differential diagnosis between the different diseases.

TREATMENT.

This is resolved into preventive and operative treatment.

Preventative treatment consists in treating carefully every case of otitis media which comes under observation. It is for our encouragement that acute purulent otitis media seldom causes mastoiditis. The primary cause of mastoiditis and brain abscess in almost every instance is chronic purulent otitis media, which the patient is too often left to outgrow. This form is dangerous, and, as MacEwen says, "one may just as well go around with a charge of dynamite in his head as with a chronic purulent otitis media."

Operative treatment consists first, in opening and cleaning out the mastoid, and, second, in opening and cleaning out diseased foci in brain and lateral sinus. Dench, in a recent article in THE JOURNAL of the American Medical Association, takes the ground that in a case of doubt an exploratory operation is justifiable. He probably has had the largest experience of any operator in the country. If the tegmen is involved it should be removed, and if the pulse has been slow, with pain in the head and vomiting, a large aspirator needle should be introduced into the brain in various directions. If pus is present the wound is to be enlarged with a bistoury, which may be sufficient, as in a recent case reported by Jack of Boston.

If the lateral sinus be involved, and the symptoms will usually tell, this must be opened and cleaned out, and if the internal jugular be involved, too, it should be ligated.

The after-treatment consists in keeping the patient quiet and on a milk diet. He should stay in bed from four to six weeks and not rise until the brain wound is healed.

Concerning the renewal of dressings, they should not be disturbed oftener than necessary.

THE CHOICE OF A GENERAL ANESTHETIC IN NOSE, THROAT AND EAR OPERATIONS.*

THOS. J. GALLAHER, A.M., M.D.
LARYNGOLOGIST, ST. LUKE'S HOSPITAL.
DENVER.

The choice of a general anesthetic in nose, throat and ear operative cases will depend on the general condition of the patient, the age and the extent of the surgical work required. The anesthetics employed in this line of work are: chloroform, alone or with oxygen, ether, nitrous oxid, alone or combined with oxygen, and ethyl bromid. The systemic conditions which must be considered in using these anesthetics are the same as in other surgical procedures, viz., the condition of the heart, the kidneys, the blood vessels and, locally, conditions in the upper respiratory tract, stenosis of larynx and pulmonary tuberculosis.

In all cases requiring a prolonged narcosis, such as in mastoid operations, operations on the middle ear, certain operations in the nose and nasopharynx, ether is certainly safer and is to be preferred, unless it produces too much irritation in the upper respiratory tract. My experience with chloroform among children has been very satisfactory, they taking the anesthetic easily and quickly. I have found it rarely necessary to employ ether among children. The use of nitrous oxid in children from 3 to 10 years of age, is attended with considerable difficulty, owing to the impossibility of holding the child still and preventing the admixture of air with the gas. It requires from one to two minutes to produce complete anesthesia, which lasts about one minute; when this gas can be administered to the child or adult in cases not requiring

* Read before the Denver and Arapahoe County Medical Society.

over a minute of anesthesia, this anesthetic is most excellent. It may be combined with oxygen to insure greater safety. I frequently use nitrous oxid in operating on the tonsils, incising the ear drum and in perforating the antrum through the nose, the canine fossa or through the alveolus.

The most convenient—and apparently as safe as any of the other anesthetics—is bromid of ethyl. This anesthetic should not be used in prolonged administration; it produces anesthesia in about one minute, lasting from two to five minutes, the patient awakening and almost at once regaining his normal condition. The amount required is from 3i to 3iv, according to age. A proper amount being measured, the whole quantity is thrown on a towel, lint or gauze, or in an inhaler, and placed over the patient's nose and mouth, and only in case of necessity or danger of asphyxiation should air be admitted. When the breathing becomes stertorous, usually about one minute, anesthesia becomes complete. It does not produce spasm of the glottis, resembling chloroform. In adults it requires a larger dose and more time to produce anesthesia. A temporary vasomotor dilatation occurs with this anesthetic, possibly producing more hemorrhage for a few seconds only, but as the effect of the drug is so short, slight hemorrhage is no contraindication to its use.

Vomiting frequently follows the use of bromid of ethyl, and it should be administered when the stomach is empty. In conclusion, bromid of ethyl must be regarded as a safe anesthetic; the German Surgical Congress, 1897, reports one death in 5,228 narcoses. From the confusing of bromid of ethyl with bromid of ethylene three fatalities are recorded. Bromid of ethylene is highly poisonous and resembles bromid of ethyl very much. Deaths have been reported from the use of impure bromid of ethyl and from asphyxia, syncope and prolonged administration.

The following excellent points are given by A. Brown Kelly,[1] surgeon Victoria Infirmary, Glasgow:

Precautions:

1. Use of pure bromid of ethyl.
2. Attention to patient's respiration.
3. Never prolong narcosis by repeating dose more than two or three times.

Advantages:

No special apparatus required.
Narcosis rapidly produced.
No irritation to respiratory mucous membrane.
Upright position of patient permissible.
Rapid regaining of consciousness.
Invaluable in dispensary work.

In regard to the position of the anesthetized patient, my rule is invariably to operate, placing them on the back, lowering the head so that the level of the pharynx is below the level of the larynx, unless from the nature of the case it is impossible to place them in this position. This position is preferred in our work because there is less danger of blood or severed growths entering the larynx, and it is a safeguard against syncope. Where it is necessary to have the patient in the upright position, or modified upright position, bromid of ethyl is to be preferred as the anesthetic; second choice is given to nitrous oxid, according to the length of anesthesia required.

The advantages of the bromid of ethyl are not generally appreciated by the profession. There are many minor surgical cases which can be operated on by the general surgeon with great satisfaction to himself and little inconvenience to the patient.

1. British Med. Jour., August, 1902.

More "Embalmed" Meat.—A short time ago an Owosso pharmacist ordered 25 pounds of saltpeter from his jobber in Detroit, and received it immediately by fast freight. It was sold to farmers of the neighborhood, who used it in curing meat. Recently so many complaints came in of the aperient properties of the meat that the wholesaler was asked to look into the matter, and it was found that a careless packer had sent opsom salts.—*Pharmaceutical Era.*

THE GIANT MAGNET IN OPHTHALMIC SURGERY.

REPORT OF TWO CASES—REMARKS.*

LEARTUS CONNOR, A.B., M.D.
DETROIT.

The extraction of foreign bodies from the interior of the eyeball presents an infinite variety of problems. These bodies are magnetic or non-magnetic—in this age of steel the magnetic are the rule. Before the use of the magnet extraction was by hooks or forceps and but few eyes were saved, especially if the foreign body was in the vitreous chamber.

The advent of the small magnet rendered extraction of magnetic splinters from the anterior chamber both easier and safer and some pieces were extracted from the vitreous without loss of the eye. The use of magnets or electromagnets as large as possible, introduced by Haab, marked a distinct advance, making it possible to save still more eyes. The usefulness of both small and large magnets has been enlarged by the localizing power of the *x*-ray and sideroscope.

Haab's paper, read before the Ophthalmic Section of the American Medical Association last June, just ten years after his first publication on the subject, awoke renewed interest in the subject, and showed that his followers in America were both numerous and enthusiastic.

I here report two illustrative cases:

CASE 1.—July 2, 1892, I. D., a vigorous blacksmith, aged 45, applied for treatment of an injury to his right eye received one hour before. This occurred while holding a piece of metal on an anvil, as a fellow workman, with blows from a heavy hammer, molded it into the required shape. He was conscious that something had hit his right eye, stunning him for a moment, and that he could not see as before.

Examination showed vision reduced to the counting of fingers by hemorrhage into the vitreous; the anterior chamber full and clear; a horizontal wound in the cornea extending from the right sclerocorneal junction, one-third the distance to the left. Directly behind was a similar wound in the iris, through which a bit of red reflex could be seen with the ophthalmoscope. The visual field was obscured by a cloudy vitreous so that nothing could be determined in this way as to the location of the steel splinter; nor could any damage to the lens be observed. Looking at these facts in the light of the rule in these cases, it was believed that the splinter had entered the eyeball, through cornea, iris, suspensory ligament and vitreous, thence dropping to the floor of the eyeball. A small magnet of considerable power applied through the route of entrance, gave no indication of the location of the splinter. Regarding the case as suitable for the giant magnet, I availed myself of the courtesy of Dr. Frothingham to use his instrument at Harper Hospital. His aid and that of Dr. Ray Connor at the operation contributed much to its favorable result.

Having anesthetized the cornea with cocain, and placed the patient and magnet so that the point of the latter could be easily approached to the center of the cornea, the instrument was placed in contact with the corneal wound, and the current very slowly turned on till its full power was secured. The result was negative, either as to pain or the appearance of the splinter, though the magnet was kept in contact with the eye for a considerable period.

After a few moments with the full current, the eye was slowly brought toward the point of the instrument, when suddenly a bulging was seen at the lowest part of the iris; a continuance of the current was followed by the rise of the splinter between the lens and iris to near the point of entrance. Here its jagged edges caught in the iris, and though the current was changed in many directions, it failed to effect a disentanglement. A small strabismus hook was introduced through the

* Read before the Detroit Ophthalmic Club.

wound so as to touch the splinter and connected with the magnet, but failed to dislodge it. A large hook was substituted, made to touch the splinter, its point being so directed as to draw the splinter inward and backward. Connecting this with the magnet, and slowly turning on the current, the splinter was seen to attach itself to the point of the hook, leave the iris, and so was readily drawn through the wounds. The splinter measured 3x2x½mm., with very sharp prongs on the end, caught in the iris.

Thus the giant magnet located the splinter on the floor of the vitreous chamber, drew it to the lens, around its lower edge, through the suspensory ligament, up the posterior chamber between the posterior surface of the iris and anterior surface of the lens to near the point of entrance, where it became entangled in the iris. Its release and final delivery through the original point of entrance was effected by the aid of a strabismus hook in properly directing the force of the current.

In all this there was practically no pain or hemorrhage into the anterior chamber.

The after-treatment was atropin, surgical asepsis, hot water applied locally to the eye, and rest. The bruised quadrant of the iris did not dilate for many days, though finally the pupil became nearly round, and the iris normally mobile.

July 4, there was slight circumcorneal injection, a yellowish-white color of the wound, clear lens, dark vitreous chamber; the fingers are easily counted.

The after course of the case was uneventful; no evidence of infection presented, and on July 28 he returned to work. At that time his vision was 8/200; lens still clear; upper and inner part of the fundus showed a red reflex, but the portion of the vitreous chamber through which the splinter traveled still remained opaque though retinal separation was not apparent.

The final result has not been reached, as on September 2 vision was 12/200, and lens clear.

October 7, vision is 12/200, lens with some striated lines, opaque spot in outer part, choroid at place of entrance of splinter.

The operation saved the eyeball in perfectly normal appearance with some sight. The size, location and patency of the wounds made it possible to extract the splinter without making fresh ones and rendered unnecessary the drawing of the splinter over the lens to the pupil in order to pass from the posterior to the anterior chamber, so reducing the peril to capsule and iris.

While exact locating of the splinter by *x*-ray and sideroscope would have rendered the diagnosis more certain, it is not clear that it would have conduced to a better result. The giant magnet both confirmed the diagnosis of a foreign body in the vitreous chamber and located it on the floor of the same—more could not be desired. It is not denied that it might have been extracted by a small magnet, had it been located by the *x*-ray, through an opening of the sclerotic, but the damage to the choroid and retina, with increased risk of infection, would have further imperiled the eye.

After the splinter appeared behind the iris it might have been extracted by the small magnet through a new opening of the cornea and iris. This also would have added to existing traumatism of the eye without practical advantage. Clearly from start to finish the giant magnet was the instrument most favorable to the securing of best results.

CASE 2.—A. S., a healthy boy, aged 18; an apprentice in a machine shop, was referred to me on September 27 by Dr. Charles Stockwell of Port Huron. While working, a piece of metal from a hammer hit his right eye, causing a severe shock and instant loss of sight. As the accident occurred but a few hours previous to his visit to me, the wound was fresh.

Examination showed anterior chamber clear; the cornea cut horizontally more than half across, beginning at outer sclero-corneal junction and ending in an upward curve to near the superior corneal margin; the iris was fully divided beneath; the lens smashed so that it was impossible to see through it, and the patient could only distinguish light from darkness.

Time being limited, he was at once taken to Harper Hospital and operated on by the giant magnet, kindly loaned by Dr. Frothingham, assisted by Dr. Guy L. Connor and the house staff.

The point of the magnet was placed in contact with the inner end of the corneal wound, and the current turned on slowly. After some moments the patient complained of pain; the iris and lens mass at inferior portion of anterior chamber were seen to bulge forward and upward. The splinter had engaged sidewise rather than endwise and was held from advancing by the lens capsule. A change in the direction of the magnetic force freed the splinter, when it flew to the point of the magnet. Meantime the anterior chamber had filled with blood from the damage done by the splinter. The edges of the wound were cleaned, atropin dropped into the conjunctival cul-de-sac, the eye bandaged and the patient returned to his home.

The route of the splinter was clearly through cornea, iris and lens, dropping to floor of vitreous chamber. Thence the magnetic force drew it forward to the lens debris, then upward and outward through openings of iris and cornea. Clearly the giant magnet confirmed the diagnosis and extracted the splinter with least additional injury to the eye.

The splinter measured 6x3x1 mm., thus explaining the extensive traumatism.

October 6, Dr. Stockwell reported the patient was doing well; had suffered no pain, except on the evening of the 2d, which was easily controlled by the local use of atropin, and an anodyne; the rent in the cornea and iris closed; opaque lens showing in the inner portion of the pupil; tenderness of eyeball, and congestion of conjunctiva disappearing. As nine days have passed since the injury, it may be assumed that danger of infection has vanished, and that we have to deal with the traumatism of the lens and vitreous chamber. The first will either disappear by absorption, or can be removed by operation—the second is still an unknown quantity. It is quite certain that the eye will be retained, and look practically as well as the uninjured eye; it is possible that useful vision may be secured.

From a careful study of these cases the writer is convinced that, without the giant magnet, enucleation would have been imperative in both. With the giant magnet a safe eye is retained in each case, some vision in the first and possibly in the second—a distinct gain over former resources.

The great cost of Haab's magnet has restricted its use, but cheaper substitutes by different operators have multiplied, which, if not equally good, are far better than the small magnets. With an increased demand because of lessened cost, it will not be long ere they will be in the hands of most doing much eye work. With such multiplication will come enlarged experience and greater skill, so that finally they may take the place of the small magnet in all cases that can be brought to hospital or office. Haab says that one magnet suffices for all his cases, and that it is as rational to have a large and small hole for a cat and her kittens as two magnets for different cases.

The technic of extraction of splinters from the vitreous chamber is far from being as simple as might appear. The most experienced are still learning, and beginners do well to heed their suggestions. The great power of the giant magnet renders it capable of irreparable harm if wrongly directed, or infinite good if rightly.

The experimental work, added to the clinical evidence of numerous observers, combines to show that at contact and up to two mm. the power of the small magnet equals, if not surpasses, the giant, but from this distance to 10 mm. the power of the giant increases in almost geometric ratio. From this fact it

is clear that the small magnet is suited only to such cases as admit of its point being brought in direct contact with the splinter, while the remaining cases are clearly within the domain of the giant magnet. Under this view of the case most, if not all, splinters in the vitreous should be extracted with the giant magnet, and not a few in the aqueous chamber.

Experiment and observation show that the farther the magnet is from the splinter the more uniform the action of its force, and the nearer the more jerky such force—the stronger the magnet the more marked this law. It follows that in practice it is wise to either (1) bring the eye close to the magnet point ere starting the current and increase its power very slowly, or (2) bring the eye from a considerable distance toward the point of the magnet with full current very gradually. The jerky force is liable to draw the splinter into the ciliary body, whence it is removed with difficulty, if at all, or it may draw it into some other undesirable location. To rectify this state of the splinter Dr. Kipp has shown us how to utilize the other tip of the magnet to repel the splinter from its misadventure; of course, this calls for a double-ended magnet. In his case the splinter fixed itself firmly in the ciliary body, and no change in direction of the magnetic force would dislodge it. He reversed the pole, when the splinter was released and readily removed. Possibly had this fact been known many failures would have been avoided, as even Haab reports failure from this cause.

When the splinter is caught in the iris one method of its release is given in the first case. Another is the use of the repelling power of the opposite pole. Still another is given by Haab thus: make an opening in the cornea directly over the site of the splinter, then enter with an iris forceps and grasp the iris just beyond the inner edge of the splinter, and gently push it inward till a rent is made in the iris over the splinter. The magnet is now applied at the artificial opening and the fragment extracted. The tear soon heals and the iris regains its normal motility—a far preferable plan to an iridectomy.

Haab so places his magnet that the force shall pass directly through the center of the cornea, expecting the splinter to approach the posterior pole of the lens, curve around its posterior surface, penetrate the suspensory ligament, enter the aqueous chamber, pass between the posterior surface of the iris and anterior surface of lens to the pupillary opening, whence it is extracted by a conveniently located corneal incision. In cases like those reported, where the wound in the cornea is large and freshly made, a new corneal incision is superfluous and the placing of the magnetic current over the fresh wound more desirable. Doubtless other cases will make it desirable to depart from Haab's rule.

A comparison of Haab's results with the small magnet and those with the giant are suggestive. The former are given by Adolph Hurzler, in Morris and Oliver's System of Ophthalmology. Of 18 cases operated on before 1892 by the small magnet, the foreign body was in the vitreous chamber; the splinter was not found in 5 cases; was extracted in 13; vision of 1/7 was secured in one case; the counting of fingers in 8; most had detachment of the retina; and in 7 the eyes had to be sacrificed. In commenting on this Knapp says that his experience was not quite so bad, as he had obtained perfect sight in a few cases where the foreign body could be seen and extracted soon after entrance.

Since 1892 to June, 1902, Haab reports 165 operations with the giant magnet. Of these 23 failed; 39 eyes were enucleated; 9 had lingering cyclitis; 19 were saved from inflammation, but were sightless. Of 71 cataracts extracted 51 had good vision.

His failure to extract the foreign body he lays to four causes: 1, A firm fixation of the splinter in the posterior wall of the eyeball (emphasis to be placed on the "firm," as in other cases the splinter was extracted from the same location); 2, firm fixation of the splinter in the ciliary body; 3, splinter held by a fibrinous exudate; 4, a splinter healed over in the lapse of months. These are some of the limitations of the giant magnet.

As elsewhere, infection by the penetration of a splinter is fatal to the eye and always a source of anxiety after the removal of the foreign body. Haab, to guard against this, introduces into the eyeball a specially prepared plug of iodoform, as both protective and curative. Most operators content themselves with placing the eye at rest with atropin and the general health in such condition as to best resist infection and promote repair of the damage done thereby.

Since the introduction of the giant magnet the *x*-ray and sideroscope have increased our power of localization, so making it possible to accomplish far more with the small magnet. They have also advantaged the use of the giant magnet; but it is clear that the latter enables us to do many successful extractions of foreign bodies from the vitreous chamber hitherto impossible.

103 Cass Street.

SOME NEW AND UNUSUAL THERAPEUTIC APPLICATIONS OF ERGOT.*

ALFRED T. LIVINGSTON, M.D.
JAMESTOWN, N. Y.

In Wood's Reference Handbook it is stated that ergot "appears to have been used by the peasantry in some parts of Europe in childbirth as much as three hundred years ago—but its formal introduction into modern medicine is due to the efforts of Dr. Stearns of New York in the early part of the present (nineteenth) century." I quote again from the same source: "The greatest value of ergot in therapeutics depends on its action on the uterus," and "Ergot is also to be recommended in all forms of capillary hemorrhages." This is essentially the ergot-therapy of the books, as well as of general practice to-day, but you will invariably find long dissertations on its poisonous effects, ergotism.

THE AUTHOR'S EARLY EXPERIENCE.

It is almost thirty years since, as assistant physician in the State Lunatic Asylum of Utica, N. Y., I began to use ergot to modify the hyperemia of the brain in insanity, especially in the melancholic class. We there used the drug almost wholly in the form of the fluid extract administered by the mouth, but I remember that I experimented, during my service there, with various preparations which I made to use hypodermically. I can not now recall the other uses to which I put the drug while at Utica; but there must have been others, for I distinctly recollect that one of the first preparations which I made for the practice of my profession in Philadelphia, to which city I removed in the autumn of 1878, was the making of a solution of the Bonjean ergotin for hypodermic use to carry in my pocket.

* Read before the New York County Med. Assn., March 16, 1903.

THE USE OF ERGOT IN CONGESTION OF THE HEAD.

It was thus that I was prepared to meet the demands of a very striking case, which I will relate, because it is from that hour I date my appreciation, which but gradually developed through many years, of the broad therapeutic application of ergot.

I had been in Philadelphia but a few weeks when an emergency call took me to a house on Sansom street, above Tenth, now, I believe, a part of the Jefferson College property. I found a very plethoric old man sitting in a large arm chair, retching violently. I had never before, nor have I since, seen such retching. It appeared that, after a usual supper, he had gone out on the street, but soon returned and began to vomit and from that time until I was called, at 11 o'clock, he had been continuously vomiting or retching. He was so completely exhausted that he did not lean forward or even hold up his head, which lay against the back of the chair. I did not attempt to question him, for he was too much occupied to reply, and, as his housekeeper could give me no further light on the case, I was obliged to draw my conclusions from what I saw; as I learned to do in dealing with the insane. The frontal vein was not a whit less in size than my little finger, and the general engorgement of head and neck I have never seen equaled. His pulse was rapid, full, bounding and hard. Between retchings he murmured but one word, "pain"! From the moment I first saw him I feared there would be a rupture of a blood vessel of the brain before I could relieve the terrible straining. I concluded that whatever the fundamental cause of this tremendous disturbance of the circulation, the present retching and pain were due to vascular engorgement within the head and that the immediate indication was to contract the dilated blood vessels. With this conclusion came the recollection of my ergot, which I began at once to administer hypodermically. I gave it slowly, as I had learned that it was not desirable to inject a syringeful of ergot as suddenly as a hypodermic of morphia is frequently given. As I progressed with the injection, I observed a gradual change in his symptoms, a lessening both of the vascular tension and of the retching. In acute disturbances of the circulation the rapidity of action of ergot is simply astounding. By the time I had emptied the syringe the suffusion had disappeared, the retching had ceased, the pulse was soft and but little accelerated, the patient was quiet and appeared comfortable. The cyclone which had been raging for four hours had passed and there was calm.

The excitement in the household had drawn many people into his room, and I detailed several of the men to undress him and put him in bed. Although there was then no indication for it, as a precaution against being called to him in the night, I gave him another hypodermic of the ergot and left him. The next morning I learned that a few minutes after I left him he fell asleep and slept continuously for six hours.

Two weeks later I was hurriedly called to him in the early morning, and found him in as great mental excitement as his previous physical excitement had been. He had just discovered that his escritoire had been pried open and a wallet containing nearly a thousand dollars had been stolen. He was practically in acute melancholia, wringing his hands, weeping and exclaiming: "Oh, God! oh, God!" in most pitiful fashion. I again applied my ergot as before, and, although it was not magical enough to restore the money, it did, as promptly as before, restore his calm.

EXPLANATION OF ITS SPECIFIC ACTION ON VASCULAR DILATATION.

I had now, within a fortnight, two impressive object lessons on the therapy of ergot, which have remained vivid through these twenty-five years. The first demonstrated that ergot contracts dilated blood vessels; the second demonstrated that ergot subdues an intense nervous excitement and causes it to disappear, although the cause of the excitement remains. My reflections on the latter and my observations of the action of ergot on many and varied disorders which are usually regarded and treated from the purely nervous standpoint, have led me to conclude that the primary disorder in the mass of nervous conditions is in the circulation in and about those nervous structures whose functional derangements are noted and that therefore the primary indication is not so much nerve foods, nerve tonics, nerve stimulants, nerve sedatives and rest, as it is an equable circulation, a circulation that is in tone in all its parts. The more I deal with nervous conditions the less use I have for phosphorus, nux or strychnia, iron, quinia, opium, the bromids or other depressant salts, and the more use I have for anything and everything that tends to equalize and tone the circulation; a proper activity of the bowels and glands generally, electricity in stimulating the vaso-motor centers and in storing the nervous batteries with the force which is like the nervous force, shock, massage, dry-cupping, exercise, and, above all, ergot, for its specific tonic effect on the circulation, especially on those vessels which are relaxed from lack of sufficient nervous impulse on them, or paralyzed from over-distension and incapable of contracting against this pressure from nervous impulse alone. While ergot contracts the unstriped muscular fiber it certainly acts on those fibers most which most need its aid; otherwise it would not tend to produce equilibrium of the circulation.

I have often observed, when applying galvanism over the cervical sympathetics, that the ears, face and neck, which before treatment were more or less suffused, gradually paled until no vestige of suffusion remained and sometimes pallor supervened. I have frequently produced the same disappearance of suffusion with ergot, but not pallor. The galvanism, stimulating the vaso-motor centers of the head, produced anemia of the vessels of that region if over-supplied; but the ergot produced only general equilibrium because it acts on all dilated vessels wherever they may be. The objection made to ergot, that it raises blood pressure, seems to me unfounded within the limit of rational dosage. If it raises blood pressure in the arteries it is diminished in the veins and capillaries, and when you have secured in any given case an ideal or approximate equilibrium of the circulation, what better result can you desire in that case? In one given case the general blood pressure may be much higher than in another given case, but in any given case, to demand something better than general equilibrium, a proper proportion in each part, seems as superfluous as to request the artist to improve the hue of the lily. Of course, normally, physiologically, there is disturbance of equilibrium of the circulation. Whatever organ or set of organs is now supreme in functional action is receiving more than its usual supply of blood and the rest have a diminished supply. Pathologic activity is quite another thing. If the circulation in the brain is not in good tone functional action is continuously excessive and not well performed. Thoughts are abundant, but not orderly. A confused mass of ideas comes before the perception and it is difficult or impossible to arrange them. If expressed, there is incoherence. Or, inflammation develops, exudation takes place and function ceases. If the circulation in the digestive tract is not in tone, secretion is abnormal in quantity or quality, or both, and the objects of its function are not obtained. If the circulation in a wounded part is not in tone repair is slow or does not occur, or inflammation supervenes with its serious or fatal consequences. All these conditions occur because

of lack of tone in the circulation. Ergot is the one powerful, effective therapeutic measure to secure both equilibrium and tone in the circulation, and this is surely "the great value of ergot in therapeutics" rather than "its action on the uterus." In this respect it has a thousand or ten thousand applications to one demand for it on the womb.

If you ask me how ergot produces its effect on the relaxed unstriped fibers, I must confess that I do not know. I have made no experiments on animals. Every new use which I have made of ergot in my practice was made on analogical reasoning on previous conditions and effects in other subjects. If, in a case of headache, I use galvanism over the cervical sympathetic ganglia, I relieve the headache by stimulating those nervous batteries to a greater activity, which creates more force, which is then distributed over their wires, the vasomotor nerves, to the muscular tissue of the blood vessels, which then contract. If I give to the same patient with the same sort of headache a hypodermic of ergot, I also relieve the headache with more certainty and more promptly; but there are other effects of a more general character, all-over effects, that are not produced by the galvanism along the neck. Hands and feet become warm, glands are stimulated and their functions better performed; the pulse, if too full, becomes smaller and softer, if too small it becomes fuller; the heart action is slowed and irritability disappears, a general sense of comfort and well-being prevails, the whole system is normalized. I can hardly believe that all this is developed in the brief time solely by the action of ergot on the vaso-motor centers; and I do not hesitate to say that I believe that ergot acts directly from the circulation in which it is being carried. Even the improved activity of the nerve centers themselves may be due to the like correcting of their own blood vessels, for I am convinced that disturbed function in any organ is chiefly due to hyperemia, dilated blood vessels. However, the manner of action of ergot is not to be compared in importance with what it does, and of that I feel more competent to assert.

INSOMNIA.

Associated with many nervous affections, especially insanity and its ally neurasthenia, is insomnia, ordinarily one of the mose difficult conditions to meet therapeutically. I believe it is generally accepted that in natural sleep there is a diminished blood supply to the brain, which theory is in harmony with my observations of the action of ergot in insomnia. Ergot is not only the most effective agent in insomnia, but the sleep which follows its administration is the most natural sleep that is produced by any drug. I think this is because it produces most nearly the condition of the circulation which belongs with natural sleep. There is sometimes such irritability of the nervous tissues, as from organic changes, that it is desirable to associate with it some one of the more purely hypnotic class to dull the abnormal sensibility, which reminds me of an incident that occurred many years ago.

HEADACHE.

I was telling the late Dr. Hodge of Philadelphia, a famous obstetrician of his day, my treatment of a case of insanity which he had commended to my care. I said that I was giving her chloral and ergot to help her to sleep. With manifest sarcasm he inquired, "Do you call ergot an hypnotic, Doctor?" "No!" I replied, "I don't call it an hypnotic, but I do call it a mighty efficient aid to an hypnotic." It is probable that the doctor had never thought of ergot except as related to his specialty. Scores of times patients have fallen asleep in my office after having a hypodermic of ergot to relieve a headache. This also suggests the relation of sleep to a diminished blood supply to the head, for headaches are undoubtedly congestive in the large majority of instances. Indeed, I think an anemia headache very rare, and if I diagnosed such an one I might then give ergot, for there would likely be some part of the circulation hyperemic, the correcting of which would bring a fuller supply of blood to the head. Headache is probably the most common complaint of humanity, and in itself comprises an extensive field for the application of ergot, not only for immediate relief, but to give tone to the cerebral vessels that will prevent recurrences. Chronic and recurrent headaches can be cured by a course of ergot, though in such cases I prefer to use galvanism over the cervical sympathetics in conjunction with hypodermic injections of ergot.

EYE AND EAR DISORDERS.

A common associate symptom with chronic or recurrent headaches is a disordered function of sight, which often leads to the use of glasses, which are frequently changed because the varying conditions of the circulation produce varying states, not only of the retina, but of muscular action on lenses and in iris. In such cases headache is, I think, too frequently attributed to the eye condition, when both are more likely related to a common cause, disordered circulation. Such patients whom I have been treating with ergot to relieve the headache have often remarked on an improvement in vision and a greater comfort in the use of the eyes in sewing, reading, etc. Sometimes, also, a similar relief has occurred from deafness associated with chronic headache. I will relate a case which I treated in Philadelphia seventeen years ago.

A young woman had come to me from Connecticut with a history of eighteen months continuous headache, which, after a few weeks' treatment with ergot and galvanism, was permanently cured. She had a friend at Bryn Mawr, who also suffered from continuous headache, whom she commended to my treatment. This woman was so deaf that I had to yell my questions into her ear and then was not always understood. She never smiled, but had that serious, anxious and constrained expression characteristic of suffering and isolation. After treating her awhile I had noticed that I did not have to speak so loudly to her, but had not mentioned the fact. One day, about a fortnight after I began treatment, she came in smiling and jubilant and exclaimed, "Do you know, Doctor, I heard my sister play on the piano yesterday?" It then appeared that she was passionately fond of music, and her sister a fine pianist, but for more than three years she had not heard the tones of the piano. She had been treated three years by a celebrated ear specialist of Philadelphia without benefit and, during the same time, by a neurologist, also without relief. Later, she heard my conversation in ordinary tone and was free from headache between treatments. Because of my removal from Philadelphia I was obliged to discontinue my treatment of this case before complete recovery, but there had been such remarkable improvement within a few weeks, both as to headache and the deafness, that recovery seemed only a matter of further treatment.

I can not say all that I desire to say and relate illustrative cases; otherwise I would be glad to detail other cases of deafness in which ergot relieved by contracting blood vessels, and also to relate other eye cases as iritis, retinitis and optic atrophy, in which ergot or ergot and galvanism effected what eye specialists had not only not accomplished, but had declared could not be accomplished. The relief of pain in iritis has been astonish-

ingly prompt and lasting. I will be very glad if some ophthalmologist will give ergot a thorough trial in that painful, serious and so largely intractable affection, glaucoma; not simply as to the relief of pain, for I believe it will be found a valuable curative measure.

PAIN IN GENERAL.

For the relief of pain in general, from toothache to heartache, you will find ergot surprisingly effectual. The man who exclaimed, "Pain is the cry of a nerve for food!" may have recognized his obligation to poetic license, but, so far as it is figuratively true, it depends on a disordered state of the circulation as the cause of the nerve starvation. A more literally correct dictum as to causation of pain would be: "Pain is the cry of a nerve because big bellied blood vessels are squeezing it too harshly." When a sufficient dose of ergot has brought them to a proper respect for the space they should occupy in the economy the nerve will be comfortable and pain will have departed.

I can not help relating, in this connection, another case which later developed two new and important uses for ergot.

A confrère in my town related the case, seeking my advice as to treatment. He had been called to a young man who was suffering intensely from pain between the eyes. He could find no cause for it, and concluded it was neuralgic and gave morphia hypodermically, but without relief, and finally had to resort to anesthetics, as the fellow was frantic from the pain. I recalled the continuous mucous tract from the nose to the frontal sinuses, and thought the pain might be due to extreme congestion of that membrane in the narrow and confined tract, and advised ergot hypodermically should he have another attack. The doctor smiled incredulously, but, as he did not know what else to do, promised to try it. It was not long before another attack did occur, and when I next met the doctor he remarked, "Well, it was very queer, but the ergot did relieve him at once."

MORPHIN POISONING.

To those who have not used ergot broadly its effect in many cases will seem "very queer" until the rationale of its action is appreciated. I do not pretend to claim that my diagnosis in this case was correct, but I do claim that, in some way, that young man's pain depended on dilated blood vessels.

Later, this subject had another of his peculiar attacks, and his physician not being accessible, another was called, who had not heard the ergot story as related to this case and, as it was a matter of pain, he began giving morphia hypodermically, ineffectually and repeatedly until he had given three and a half grains, when its poisonous effects appeared and the patient was relieved of pain, also of perceptible pulse and pretty nearly of respiration. The family physician was then found, and sometime later I was sent for to bring my battery. I took with me a large Kidder coil and an extra cell. I found the patient on the floor, limp, cold, cyanosed, pulseless, even the heart action not discoverable, and respiration but two per minute. It was a long time before there was any evidence of sensation from even the full strength of the coil and a couple of hours before there was any demonstration of pain. At that time, when the application was suspended, he lapsed into the deep stupor from which no other means used to rouse him brought any response. While continuing to apply the faradism, the question occurred to me, "What is the cause of this universal paralysis?" which I expressed aloud, and, having no response, answered myself: "It must be the great vascular engorgement of the brain." With this thought came the idea of using ergot, which I immediately proposed, and this was assented to by the doctor who had given the morphia, but the family physician objected that, as the patient would die in any case, if we gave him a hypodermic the family would be sure we had killed him. I argued, but in vain. Fortunately the family physician soon after remembered an obstetric appointment, and as soon as he left I gave a hypodermic of ergot, with the result that in a brief time the patient, without other means being used to rouse him, sat up awake and clear and conversed with us and did not again relapse.

APPENDICITIS.

A few months after the morphia incident I was called to this same subject, and found him in a high fever, with extremely rapid pulse and the local symptoms of appendicitis. The local pain was so great that he screamed in his agony. The pulse was so rapid that I could only estimate it as about 180. Recognizing the congestive element, I gave him ergot hypodermically, which relieved the pain in a few minutes, and the pulse dropped to 120. When the pain returned the same treatment had the same result. Thinking the case might demand surgical interference, and preferring to share the responsibility, I called Dr. Roswell Park, of Buffalo, who diagnosed appendicitis, but not yet at the stage for operating. The day that Dr. Park was called the patient and his friends believed him to be dying. A clergyman was called from his pulpit, the good-bys were said by the family, and the patient directed as to the postmortem rites. I continued, however, with my ergot, the patient recovered within a fortnight, and I have not known of his having any illness during the nearly eleven years that have intervened.

OPIUM POISONING.

Here are three utterly distinct conditions, all extreme, in the same subject, having but one common element, vascular dilatation, in the relief of which one drug, ergot, was clearly the effective factor. I have not had an opportunity since the case related to test ergot in opium poisoning, but it would certainly be my first resort were I called to such a case, and I would be grateful to anyone who may have opportunity, if he will try it. I would give one syringeful after another of the solution which I shall describe, giving each one slowly (or, as there is usually a multiplicity of doctors, two might be given at the same time, which would hasten absorption) until there was marked improvement in the circulation, even if it required half a dozen or more syringefuls to accomplish it. I am confident that you may safely rely on this measure alone, except that if the drug was swallowed the stomach should be cleansed.

DRUG HABITS.

I have used ergot for nearly twenty-five years in the treatment of the habit cases, both opiate and alcoholic, and believe it to be by all odds the best treatment, not even excepting the "gold cure." I always immediately and wholly discontinue the habit drug and substitute no other. It may possibly be easier, both for doctor and patient, to gradually reduce the quantity for a few days, giving ergot four to six times a day as a preparation for the final total discontinuance; but I have preferred, as a desirable moral element, to demonstrate to the habitué that neither his habit-narcotic nor any other is necessary to him in any degree. If, in the case of opium addiction, the drug is immediately and wholly discontinued without previous preparation by the ergot, the reaction that occurs during the twenty-four hours following the first twenty-four or thirty-six hours of abstinence is sometimes so appalling that it requires as much moral force on the part of the physician to do his duty as any other situation in which he is placed. He is quite likely to think more of the condition which confronts him than the theory he started to demonstrate; yet, I assure him, he may hold to his theory if he does not forget his hypodermic and his solution of ergot. After that critical twenty-four hours the treatment is easy.

DELIRIUM TREMENS.

In delirium tremens ergot is *the* remedy to calm the mental and physical excitement. A man was brought into my office in such physical and mental agitation that it was with difficulty that I gave the first hypodermic of ergot, and he left the office within an hour as calm and rational as anyone before me. No other drug will so promptly set a man on his feet after a debauch, or so thoroughly clear the head and put one "in condition" after a night's dissipation; and, in the graver sequels of prolonged alcoholic hyperemia of nerve centers, such as paralysis and coma from the pressure of exudates, you will be most agreeably surprised, to put it mildly, at the results of a few hypodermics of ergot. Indeed, to correct the conditions which produce exudation in general and to secure the absorption of the exudates, from simple edema of the feet to serious apoplexy, you can not do better than to give ergot by hypodermic injection. Please treat your next case of edema of the larynx in this manner.

ASTHMA AND OTHER SPASMS.

Since reading the Chautauqua paper, I have been asked as to the danger of producing spasm of sphincters or bladder. In an experience of more than 25,000 hypodermic injections of ergot, in some instances having given ten ordinary syringefuls in twenty-four hours (the equivalent of one-half dram of Squibbs' solid extract, or two and one-half drams of the powdered ergot), I have never observed any such effect; and not more than half a dozen times have I produced spasm of the womb from giving a little too much ergot during the menstrual activity. Considering the cause of spasm in general, which is either irritation from dilated blood vessels in motor centers or peripheral irritation of sensory terminals from the same cause, reflected through motor centers to the muscles involved, ergot would appear to be indicated rather than contra-indicated in spasm. I know that in many spasmodic or convulsion conditions ergot is beautifully effectual in relieving. Asthma has yielded in a few minutes to ergot, even when the attack has been extreme and prolonged; and many cases of uremic convulsions have been as promptly relieved by ergot. When I speak of using ergot, I always mean hypodermically, as I have no confidence in its desired action when administered by the mouth, which is often, also, offensive to the stomach. The two methods are not to be compared as to their desirable results.

PUERPERAL ECLAMPSIA.

Obstetrics is out of my sphere of practice, and I have had no opportunity to demonstrate the applicability of ergot to puerperal eclampsia, but, considering its essentially-like causation to that of uremic convulsions from toxins, which disturb the circulation in nerve centers as well as the probable inefficient glandular activity in eliminating those poisons, I do not hesitate to commend its trial in that affection, believing that happy results will be obtained. Doubtless many will hestitate to give ergot to the pregnant woman, but I have frequently so used it without ill results, and I have had the assurance of a celebrated gynecologist that he would use it in pregnancy if indicated. In the convulsions occurring before or during labor, I would use it cautiously, but after the womb is emptied, I would use it freely and would expect to see brilliant results.

HYSTERO-EPILEPSY, CHOREA, ETC.

Had I time, I would relate a striking case of hystero-epilepsy of considerable duration who, during the convulsions, required half a dozen men to hold him in bed and who was practically cured from the first hypodermic, no further convulsions occurring. In the same way, I have relieved ordinary hysterical convulsions in a few minutes. The cataleptic hysteric is a typical case for the administration of ergot. With ergot you will cure the acute choreic promptly instead of waiting weeks and months, perhaps vainly, for the action of tonics and nerve sedatives. The old chronic choreic as well as the chronic sufferer from paralysis agitans you will not promptly cure, but you will promptly benefit and accomplish more with ergot than with any other drug. In infantile convulsions and paralyses and in the night terrors of children I earnestly commend to you the use of ergot, but I also commend the careful inspection of prepuce and clitoris and the correcting of their abnormalities. Indeed, in all convulsive and nervous conditions not clearly related to toxic influence examine carefully the sexual and pelvic organs for primary causative irritation, after which consider the digestive tract.

In epilepsy you will have all the advantages from the use of ergot that you have had from the bromids, without the latter's tremendous disadvantages.

BULBAR PARALYSIS, PARESIS, ETC.

As illustrative of the successful use of ergot in a condition regarded as incurable, I will relate another case.

Ten years ago a man came to me to have the galvano-cautery used on the back of his neck. He said, in effect, that he had consulted neurologists in Buffalo and New York, who had agreed that he had a fatal disorder, bulbar paralysis. The New York specialist exhibited great interest in his case as a rarity, and assured him that his was a beautiful case, but that all such cases progressed to fatality, though, possibly, cauterization might give him some temporary relief or extenuation of life. I saw that the poor fellow was frightened almost to death and, while he was not there to consult me, humanity led me to attempt to modify the influence of the unfavorable prognoses and to say that I thought that some other treatment would be much more beneficial than what he came for. He was in a state of mind to grasp at straws and requested me to treat him. I do not answer for the diagnoses, but they were made by those whom I regarded as more competent than myself. My own judgment was rather that he was developing general paresis. However, I treated him thoroughly with ergot and galvanism and he had no other treatment except buckthorn as a laxative. He made a rapid recovery, and has been in good health since and active as a public speaker.

I have had well-established cases of general paresis so improved by ergot that I questioned the correctness of my diagnosis, and I believe that if paresis could be so treated in the early stage it might be cured.

ACUTE INFLAMMATIONS.

Another class of diseases should be considered in relation to ergot, the acute inflammatory. It is surely rational to assume that ergot is indicated here, for the central element is dilated blood vessels, and ergot does contract the dilated blood vessels. But, better than theory is demonstration, and I have repeatedly demonstrated its value in meningitis, pneumonia, peritonitis, appendicitis, metritis, tonsilitis, erysipelas, erythema and inflammation of veins and arteries. The nearer to the initiation of inflammatory states you apply ergot, the more beautiful will be the demonstration of its effective action. I have also used it largely in the zymotic diseases to control or modify local hyperemia, which give pain and discomfort. I know that it is possible to make even the very sick comfortable, and there is some satisfaction in being comfortably sick. The sequellæ of influenza, the most serious part of that disease, local passive

congestion in one or more vital organs from paresis of vaso-motor centers, are relieved by ergot, though often slowly, as the influenzic poison has a peculiarly persistent depressing action on the sympathetic ganglia, but persistent use of ergot will overcome this.

TYPHOID FEVER.

I will be very grateful if some of you gentlemen who frequently treat typhoid fever will use ergot from the beginning. I am sure that by it you will accomplish several desirable results; limiting the local inflammation that so often leads to hemorrhages and perforation, the fatal elements of the disease, securing better elimination of the septic contents of the bowel by stimulating its muscular coat, preventing the head symptoms by holding the circulation there in tone and, by its effect on the general circulation, relieving the work of the heart.

ANGINA PECTORIS AND OTHER HEART AFFECTIONS.

There is still another class of disorders in which ergot stands pre-eminent as a means of relief—I refer to all those conditions, whether in kidneys, liver, lungs, brain or digestive tract, which produce functional and sometimes, later, organic trouble in the heart. It appears to me that quite too much attention is given to the heart in many cases and not enough to the conditions that have produced and are producing the symptoms in the heart. In general, the heart symptoms themselves and the remote states of disturbed circulation which produce them will be more effectually corrected by ergot than by any other drug of the materia medica. To use a pertinent slang expression, "It makes me tired," as the practice makes the poor hearts of the subjects so treated, when I think of the prodding and spurring of that overwrought organ by all the heart tonics and heart stimulants the doctors can think of, or, in other cases, lowering its force by sedatives and depressants, when the real indication is to remove the conditions which are overworking it or the conditions which are irritating its motor center; in other words, securing as promptly as possible approximate equilibrium of the circulation, to which end ergot is the desideratum. To this end I declare ergot to be tenfold more valuable and efficient than all the heart tonics, heart stimulants and heart sedatives combined. Do not understand me as condemning these classes of medicaments. I am only condemning their improper use. A disorder associated with what I have been saying is angina pectoris, in which I have used ergot with the happiest results. I recently heard a paper on that subject by a prominent practitioner personally known to many of you. I was asked to take a part in the discussion, and commended ergot. The physician promptly replied that "of all drugs, that one was most contraindicated." I will only say that if in angina pectoris or any other affection you deem it undesirable to make the labor of the heart as easy as possible by removing barriers that it can not surmount and lifting loads that have fatigued it, or undesirable to calm excited nerve centers that have made its action tumultuous and straining, then do not give ergot, for it is surely then contraindicated.

PRELIMINARY TO OPERATION.

I will detain you with but one more suggestion as to the therapy of ergot, which leads me into a field whose workers are not much given to the use of medicaments. And yet I am convinced that this one drug will be found by the surgeon who fairly tests it in his practice as valuable and necessary for the purposes which I shall point out as anesthetics or antiseptics for their especial purposes, and more valuable to him than any other drug outside of those classes.

The present era of surgery is the most brilliant of all history, so brilliant that the mind that contemplates it is dazzled as the eyes are dazzled by looking at the sun. The foundation on which this grand superstructure has been builded is antisepsis, the destruction of those microscopic organisms whose presence in wounds produces inflammation, which has always been the Waterloo of surgery. It is no disparagement to modern surgery to recall that before the day of antiseptics the surgeon was not always defeated; that, indeed, his victories were counted by the thousands and tens of thousands; and why? We surely can not assume that the bacterium did not then exist, any more than we can assume that the mass of mankind who do not develop tuberculosis are never exposed to its bacterium. There was in those successful cases a condition that prevented the fatal activity of the bacteria. I believe that the explanation is to be found in the state of the circulation. Inflammation can only follow congestion, and congestion can only occur when the walls of the blood vessels in the injured or wounded part have not sufficient tone. Where there is not that sufficient tone ergot will develop it, and this is the function and province of ergot in surgery. In all cases where there is time and opportunity to prepare a subject for operation by a preliminary course of ergot it should be done as carefully and conscientiously as you would secure the most perfect antisepsis during and following the operation. When the subject can not be so prepared in advance, the administration of ergot should be made hypodermically before and during anesthesia and operation and afterward until the healing is complete. You will find that the subject who has had a proper preliminary preparation by ergot for operation will have little or none of those distressing and often seriously objectionable accompaniments and sequellæ of anesthesia, nausea, retching, vomiting and delirium; and fluid nutriment may be safely given, as a rule, within a couple of hours after operation and at intervals thereafter.

SHOCK.

That great immediate dread of the surgeon, shock, will also be wholly prevented or greatly modified; and in those cases in which shock has preceded the surgeon's relation, ergot will quickly prepare the subject for prompt and safe operation, when delay or the imposing of operative shock on the previously shocked nervous centers would be fatal. Pain, for which the surgeon is accustomed to administer morphia, a drug that congests and disturbs every vital function, will be prevented by keeping the circulation under the influence of ergot, for it is congestion which determines the pain. Thus morphia may be avoided, which is always desirable; but if it must be administered, combine it with plenty of ergot to prevent its undesirable effects. After operation the thing desired is repair, and the sooner it is accomplished the better for the surgeon's reputation and the patient's satisfaction and future usefulness.

When you read in the evening paper: "Mr. John Jones was operated on to-day at the Blank Hospital by the famous Dr. Blank. The operation was successful." And, a few days later, you discover Mr. John Jones' name in the obituary column, it means that there is something more to be desired than surgical skill and the bacterial destroyer. That desirable thing is a proper activity of the circulation in general and, in particular, in the region of the operation. That proper activity is only

secured by a certain caliber of the vessels which carry to and from that region the nutritive fluid, and I feel that the most important message which I bear to you tonight is that ergot will, more surely and effectually than any other means, determine that proper caliber; whether for repair of a wound after operation or for aborting or minimizing an acute inflammation, or for raising the blockade that has wearied or exhausted the heart, or for relieving a coma or paralysis or convulsion, or for promoting the absorption of exudates, or for restoring normal function in an organ, or for calming an excited nerve center, or for relieving pain, or for simply restoring that general equilibrium of the circulation which warms the cold hands and feet, cools the hot brain and brings to an unhappy mortal, calm, comfort and peace.

Now, as a stranger to you, and without the weight of that bubble, reputation, to impress my words on you, I will confess that I do not expect you to accept now, nor until you have made the demonstrations for yourselves, all the claims I have made for ergot. I know that much of what I have said is novel to the mass of the medical profession and, in the developing of the application of ergot to disease. I have often scarcely credited my own senses, so astonishing was its action. I know, too, that a widespread prejudice exists against ergot; that it is regarded by many as a criminal among drugs. Patients of mine traveling abroad have been unable to purchase it in some countries of Europe, being told that it was a rank poison, and many physicians in this country have expressed the same view. At the sacrifice of conventional form in medical literature, I have endeavored to impress on you more strikingly the facts I had to present, the theories I wished to express. If I have so far succeeded in awakening your interest in ergot as to lead you to a wide and widening practical application of this efficient and remarkable drug, my mission tonight will have been attained. How you may regard me, concerns few beside ourselves. How you may regard ergot, vastly concerns thousands whose lives and futures will be placed in your hands in the years to come. You may have been impressed that I have a kaleidoscopic view of ergot or that it is to me like a musical instrument, a harp of a thousand strings, on which I play many tunes. If you will analyze all that I have said, you will find but one chord, one string, that makes, like Paganini's, many tones; which, unlike Paganini's, are harsh and inharmonious, unhealthful. All that is novel in the broad therapeutic application of ergot is the recognition of the varied, unhealthful tones of that one chord in all the diseases I have mentioned. That chord is *abnormally dilated blood vessels*. Ergot is the master hand whose magical touch vibrates them to harmony and health.

THE MODE OF PREPARATION AND OF USE.

Since the publication of the Chautauqua paper I have had so many inquiries as to the preparation I use, dose, method of administering, etc., that I will anticipate such inquiries in relation to this paper. I have experimented with a great many solutions which I have made, the object of which was to find that antiseptic which would best preserve a watery solution from bacterial development, toward which there is a great tendency in ergot, and to avoid the pain in introducing it hypodermically, and to prevent local congestion or inflammation at the region of application. I discarded three classes of antiseptics, the mercurial, from the great irritation; the iodin group, because of their tendency to set free the iodin, and the carbolic acid group, because of the tendency to produce a turbid state, a suspension of a fine precipitate which filtration would not correct. I have also experimented with every preparation of ergot to which my attention has been called, only to discard all except the preparation of aseptic ergot, which is put up in tiny bottles, hermetically sealed, each containing one ordinary dose. This solution is the most satisfactory of all the preparations I have experimented with except my own solution, and I do not hesitate to recommend it. However, I prefer this solution:

> Squibbs' extract of ergot 1 drachm, dissolved in solution formalin (1/3000) one ounce. Mix.

The distilled water should be boiled to sterilize, and, after cooling, the formalin added before the ergot is dissolved. The solution should then be filtered. You should not allow yourself to get out of this solution, for, curiously, a solution that has been made a few days is more satisfactory to the patient, giving less hurt, than one freshly made. Until the last two years I purchased the ounce or 25 gram jars of Squibbs' extract, but I much prefer, as being less troublesome and being always surely aseptic, the drachm packages wrapped in tinfoil, which my friend, Dr. E. H. Squibb, has been preparing for me. In making the solution great care should be taken to have everything used in the process thoroughly sterilized. It is better to keep in a cool place and protected what you do not carry with you. I regard the syringe used and the care of the needles as important. The best syringe is a glass one with asbestos plunger. As avoiding trouble in refilling, I prefer a syringe that holds a drachm or more. I always scour the needles, after each use, with sapolio, having filled the syringe with distilled water, which I throw through the needle slowly and continuously while drawing it from base to point between thumb and finger, which holds some powdered sapolio, then rinse well and dry with tissue paper outside and the inside as well by screwing the needle on a cone of the tissue paper, afterwards wrapping each needle in a bit of tissue paper, which sufficiently protects it.

A minimum effective dose, for an adult, of this solution, I would regard as 15 minims, but I seldom give less than an ordinary hypodermic syringeful, 25 or 30 minims, and often two such syringefuls. In extreme cases, as uremic convulsions, I have given four such syringefuls. One syringeful will generally relieve even a bad headache, but if not relieved in half an hour, repeat the dose.

It is always well to continue to use ergot, where there is a congestive tendency, for some time after symptoms have disappeared. The largest quantity of ergot that I have given in twenty-four hours is ten ordinary syringefuls.

As to the place of application, I prefer the deltoid of the left arm. It seems better to inject into muscle, but the space between the scapullæ is a good one to inject under the skin. Unless there is good tone in the blood vessels where it is injected, ergot will cause some congestion and sense of soreness until a few doses have improved the tone of the circulation, after which the patient will not mind the injections. Sometimes it would be a good precaution and never out of place to especially cleanse the skin where the needle is to be inserted.

I have never had an abscess purely from ergot, not a half dozen in all my experience, and those clearly explicable, as from an associated irritant. Always inject ergot slowly, keeping the finger on the stem of the

plunger and against the base of the syringe, to avoid suddenly throwing in too rapidly because of irregularities in the bore of the syringe or inequalities of pressure.

Finally, as to ill effects in general and, in particular, that dreadful sequence, ergotism, I am reminded of a celebrated chapter, whose title and text I will quote:

"On Snakes in Ireland.
There are no snakes in Ireland."

I have had a large experience with ergot, and I have never seen a suggestion of ergotism, nor any other effect that I could denominate ill. If you are looking for "snakes" in ergot, you must search elsewhere than in Squibbs' tinfoiled lozenges, and I think you will fail to find them lurking in the tiny bottles of aseptic ergot.

With a proper solution and the syringe and needle sterile, use ergot freely until you have secured the desired effects, and do not lie awake at night in dread of "snakes" in ergot.

DISCUSSION.

DR. F. H. WIGGIN, New York, said he could corroborate many of the statements made in the paper. His first trial of ergot was in a case of very dangerous intestinal paresis following a difficult laparotomy. The patient received ten syringefuls in 24 hours and was greatly benefited thereby. Administration continued on signs of relapse and recovery was uneventful thereafter. The drug was also useful in controlling nausea following anesthetic. The pain of acute articular rheumatism and also the morphin habit were controlled by it.

DR. O. W. S. TOMS, Nyack, N. Y., described a severe case of acute pulmonary edema which had yielded most satisfactorily to two syringefuls of Squibb's ergot solution. The attack had been brought on by disturbed compensation of the heart. Another interesting case reported in detail was one of severe purpura associated with rheumatoid and neuralgic pains and hemorrhages from the bowel. There were recurrences of eruption each time the patient came out of the influence of morphin. Finally ergot was given hypodermically with remarkably good results. Two injections were given daily for a few days. After each administration the rash became dark and was quite pale by the next day.

DR. CHARLES PHELPS, New York, had found ergot very useful in arteriosclerosis, and believed it should prove of value in cases of cerebral contusion.

DR. WILLIS E. FORD, Utica, N. Y., said that even though some of the claims made in the paper seemed hard to believe they should be accepted with confidence, for he could personally vouch for Dr. Livingston's experience and diagnostic ability in the field of neurology. He had found ergot useful in subinvolution and chronic metritis responsible for failure of lactation. It was difficult to believe that this drug could take the place of well-known heart tonics and stimulants, but if it were so ergot would certainly assume a new prominence.

DR. ALEXANDER LAMBERT, New York, said he had recently made an extensive trial of ergot. The first case was a desperate one of angina pectoris, in which the usual remedies had utterly failed. In 10 minutes after the first injection of ergot he was completely relieved, and this experience was duplicated in several subsequent attacks. In a case of opium poisoning the use of ergot had permanently restored the patient to consciousness. A most interesting experience had been with 10 cases of alcoholic wet brain in Bellevue Hospital. Formerly under the most approved treatment this class of cases had yielded a mortality of 95 per cent., but in the present series, treated by ergot in doses of 15 minims every 2 hours, 7 cases out of 10 recovered. Ergot was also of greatest value in relieving the depression and tremor of ordinary acute alcoholisms. He had used ergot also in several cases of severe alcoholic pneumonia and in pulmonary congestion and edema with the most satisfactory results. One case of surgical shock was reported in which ergot had controlled severe shock promptly and had enabled an urgent operation to be done successfully.

DR. EDWARD W. LEE, New York, said that for many years he had used ergot with apparent benefit in chronic hypertrophy of prostate and in acute inflammation of this gland.

DR. LIVINGSTON, in closing the discussion, said he had used ergot in cases of concussion of brain with decided benefit.

Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.*

(By Our Special Commissioner.)

I.

The city of Ithaca is most attractively situated in central New York at the upper end of Lake Cayuga, about one thousand feet above the sea level. The location and surroundings suggest unusual healthfulness, and, with a single exception, to be noted presently, there has been, up to the present year, no markedly excessive prevalence of disease. According to the United States Census for 1900 the death rate for that year was only 16.3. The town is reported as having 194 manufacturing establishments with an aggregate capital of $3,000,000, but it is chiefly celebrated for being the seat of Cornell University, and is pre-eminently a college community. During the college year the student population constitutes nearly one-fifth of the total number of inhabitants.[1]

In the matter of general cleanliness and attention to garbage disposal and other sanitary details, Ithaca does not impress one as being any more lax than scores of similar communities. Indeed, it is probably considerably superior to most non-college towns of its size and surroundings, and so far as appears, there has been only a single indication that Ithaca was not an unusually healthful community.

PREVALENCE OF TYPHOID FEVER IN FORMER YEARS.

For many years prior to the present outbreak typhoid fever, or a disease closely resembling it, so far from being an uncommon disease in Ithaca, has been rarely absent. A low type of fever, deemed by some so peculiar to the town that it has been honored by the designation of "Ithaca fever" (save the mark!) has occurred with varying severity for years. In the year preceding the present epidemic, cases of "Ithaca fever" and kindred illnesses appear to have been especially numerous. According to the official record of the university infirmary, "eighteen cases of typhoid and enteric fever, some of them very severe," were cared for in that institution during the year 1901-02. I have found that not infrequent mention of cases of typhoid fever occur in the files of a local newspaper during the months of January and February, 1902, and it is well known among the Ithaca physicians and some of the townspeople that a considerable number of cases of "fever" occurred at that time. In

* It is to be understood that the matter appearing last week was merely a preliminary statement based on information then obtainable.

1. Population, U. S. Census, 1900, 13,136. The number of students recorded in the University Register at the beginning of the year 1902-03 was 2,686, but 165 of these were residents of Ithaca and are probably included in the census enumeration.

the opinion of some who have investigated the matter, the number of such cases should be placed as high as one hundred. In one of the earliest notices of the present epidemic[2] a comparison was drawn between "the epidemic of this year and last."

BEGINNING OF PRESENT EPIDEMIC.

As far as the facts can be obtained regarding the time of onset of the present outbreak, it appears that about fourteen cases of a low fever, possibly typhoid, occurred between Nov. 17, 1902, and Jan. 15, 1903. Then, on January 1, some five or six cases of fever developed, and during the following week several cases each day were reported. After January 25 the number of cases reported daily seems to have increased very materially, and the existence of a serious epidemic began to be admitted, although most unwillingly. Some general uneasiness, however, seems to have been felt as early as January 22. On that date one of the Ithaca papers[3] contained the following editorial note:

Boil the drinking water. Reports from physicians show that there are several cases of typhoid fever in the city. Impure drinking water is one of the most fruitful sources of typhoid infection. If you would take no risk, carefully prepare every drop of water you drink.

On the day preceding this statement, the same paper contained a note on typhoid fever in Philadelphia with the following somewhat pragmatical comment, which, in the light of subsequent events, reads rather curiously:

The cause of the epidemic in Philadelphia is attributed to a poor water supply, and Ithacans who visit the Pennsylvania metropolis should be careful about what they drink. It is a safe rule never to drink water at any time unless perfectly sure of its purity.

By February 2 the gravity of the situation in Ithaca had become clearly manifest. On that day the following statement was made in the local press:

The epidemic of typhoid fever is spreading with terrible rapidity throughout the city. The physicians are over-worked, the hospitals are over-crowded, nurses are lacking to care for the sick, and two deaths have been caused by the disease, one Saturday and one to-day.

DIMENSIONS OF EPIDEMIC, NUMBER OF CASES AND DEATHS.

It is unfortunately impossible to obtain precise information regarding the time of beginning of the outbreak, the sequence of the cases and the dimensions of the whole epidemic. The records of the local health board are in a confessedly fragmentary and imperfect condition, and the actual number of cases occurring in Ithaca during the early months of 1903 will probably never be known. I am informed by Dr. G. H. Soper, the representative of the New York State Board of Health, that he had secured a record of 770 cases that had developed prior to March 12. This, however, is generally believed by Dr. Soper and others, who have firsthand knowledge of the epidemic, to fall somewhat below the truth. Just how far below is a matter for conjecture. Some observers would place the number of cases at over one thousand, and lay great stress on the existence of a large number of ambulant cases, but it must be remembered that a number of such cases occur during every typhoid epidemic, and there seems to be nothing to indicate that the Ithaca infection has given rise to a disproportionately large number of cases escaping the notice of physicians.

Among the students in Cornell University the epidemic has found many victims. The university authorities had, on March 12, a record of 119 cases with 12 deaths, that had occurred among the students remaining in Ithaca; and of 46 cases and 10 deaths reported from among those students who had gone from Ithaca to their respective homes. It is estimated that at least one-third of the total number of students left Ithaca after the outbreak of the fever, so that the 46 cases reported to the university authorities constitute only a fraction of the number in whom the disease developed outside of the city. The writer has obtained, in fact, the names of eighteen students not on the university lists who are reported as ill at their homes from typhoid fever contracted in Ithaca. From the files of local newspapers have also been obtained the names of seventeen persons who are believed on strong grounds to have contracted typhoid fever in Ithaca, but who developed the disease outside the town, for the most part in neighboring villages. One case, however, presumably contracted in Ithaca, has appeared as far away as Wheatland, South Dakota. From the best information obtainable, therefore, the number of cases that can fairly be attributed to infection in Ithaca, between January 1 and March 12 is as follows:

	Students.	Citizens.	Total.
Cases in Ithaca	119	651	770
Cases outside of Ithaca	64	17	81
Totals	183	668	851

The record of deaths, although doubtless incomplete, probably presents a narrower margin of error than the cases.

TABLE I.

DEATHS FROM TYPHOID FEVER ATTRIBUTABLE TO INFECTION IN ITHACA.[4]

Jan. 23.... 1	Feb. 14.... 1	Feb. 28... 3
Feb. 1.... 1	Feb. 15.... 4	March 2. 3
Feb. 2.... 2	Feb. 17.... 3	March 3. 1
Feb. 4.... 1	Feb. 18.... 1	March 4. 1
Feb. 6.... 1	Feb. 20.... 1	March 7. 2
Feb. 7.... 1	Feb. 21.... 1	March 11. 2
Feb. 8.... 1	Feb. 22.... 5	March 12. 1
Feb. 10.... 1	Feb. 23.... 2	March 13. 2
Feb. 12.... 2	Feb. 25.... 2	March 14. 1
Feb. 13.... 2	Feb. 27.... 2	Total ..51

SAME RECORD, BY WEEKS.

Jan. 23 to Jan. 29	1
Jan. 30 to Feb. 5	4
Feb. 6 to Feb. 12	6
Feb. 13 to Feb. 19	11
Feb. 20 to Feb. 26	11
Feb. 26 to March 5	10
March 6 to March 12	5

For reasons already stated definite information can not be obtained regarding the sequence of cases in the whole population. The facts are at hand, however, concerning the dates at which some 97 Cornell students were admitted to the university infirmary and its annexes, and these afford probably as reliable information as can be secured regarding sequence.

2. Ithaca Daily News, Jan. 26, 1903.
3. Daily News, Jan. 22, 1903.

4. Including 12 students who contracted the disease in Ithaca, but died at their homes.

TABLE II.[5]

CASES OF TYPHOID FEVER OCCURRING AMONG CORNELL STUDENTS IN ITHACA, THE DATE OF INCEPTION OF WHICH IS APPROXIMATELY KNOWN.

Jan. 23.. 1		Feb. 4.. 5		Feb. 16.. 1		Feb. 28.. 1	
Jan. 24.. 2	6	Feb. 5.. 5	21	Feb. 17.. 2	4	Mch. 1. 0	3
Jan. 25.. 3		Feb. 6..11		Feb. 18.. 1		Mch. 2. 2	
Jan. 26.. 2		Feb. 7.. 3		Feb. 19.. 0		Mch. 3. 0	
Jan. 27.. 1	6	Feb. 8.. 1	8	Feb. 20.. 1	3	Mch. 4. 0	0
Jan. 28.. 3		Feb. 9.. 4		Feb. 21.. 2		Mch. 5. 0	
Jan. 29.. 4		Feb. 10.. 4		Feb. 22.. 2		Mch. 6. 0	
Jan. 30.. 1	10	Feb. 11.. 4	8	Feb. 23.. 1	4	Mch. 7. 0	0
Jan. 31.. 5		Feb. 12.. 0		Feb. 24.. 1		Mch. 8. 0	
Feb. 1.. 5		Feb. 13.. 2		Feb. 25.. 4		Mch. 9. 0	
Feb. 2.. 3	11	Feb. 14.. 0	3	Feb. 26.. 0	5	Mch. 10. 4	5
Feb. 3.. 3		Feb. 15.. 1		Feb. 27.. 1		Mch. 11. 1	

In addition to this number, 22 students have been ill in lodgings or in the city hospitals, the date of the beginning of their cases being apparently unknown. So far as can be learned, the sequence of cases in the town followed closely the sequence of cases among the students, but owing to the laxity of report and record, already referred to, even the approximate dates of the beginning of the disease can not be ascertained.

There seems at first to have been much doubt as to whether the fever was really typhoid fever or the familiar "Ithaca fever." The latter disease, apparently, did not seem so formidable to many citizens.

Throughout the epidemic the situation has been singularly befogged by a tendency on the part of certain of the Ithaca physicians to deny the prevalence of "genuine" typhoid fever, and to ascribe the prevailing illness to "paracolon infection." The evidence on which this view is based appears to be that a negative result with the Widal reaction has been obtained in a considerable proportion of the cases that have been tested. There is no instance where any paracolon or paratyphoid organism has been isolated from any case of the disease. Even if it were conclusively proven that half, or even all, of the cases of "fever" in Ithaca were true "paracolon" infections, it is difficult to see why that fact should materially influence the general situation. It must still have been admitted that a disease of serious character which can not as yet be clinically differentiated from typhoid fever, and which, so far as is known, does not demand essentially different treatment, prevailed excessively in the town. Whatever the nature of the microorganism, the probable mode of infection and the sources of the infection remained the same, as did the necessity for taking vigorous measures for preventing its spread. There was not a single particular in which the practical handling of the outbreak could have been affected, even if convincing evidence had been secured that all the cases in Ithaca were paracolon cases. The insistence on a distinction, which, under the circumstances, could possess only an academic value and did not facilitate immediate and aggressive action was not a fortunate policy.

(To be continued.)

5. The several dates refer to the day of admission to the infirmary and can be taken as only an approximate indication of the day of inception of the disease.

Gail Borden, inventor of the system of condensing milk, died at San Francisco, Cal., November 26, from poisoning, "after eating a duck that had been kept in cold storage."

Suicides in American Cities.—If we may rely on the statistics quoted by the *New Orleans Times-Democrat*, there are some strange facts as to the relative rate of suicides in the different American cities. San Francisco has the largest ratio, 39.1 per 100,000 of population. Next comes Los Angeles, 29.8. Chicago is the third in order with a ratio of 24.0, followed by the neighboring city of Milwaukee, whose ratio is 22.2, and then New Orleans, 21.8, and Cincinnati following close with 21.2. New Haven is next with 20.9, and then comes the Borough of Manhattan with 20.0, though Greater New York, as a whole, is well down the list with a ratio of only 13.6. This is less than Rochester, Indianapolis, Philadelphia, Pittsburg, Baltimore, Boston, Detroit, Omaha and Louisville, besides all of those specifically enumerated above. As to the foreign cities, Paris leads the list with a ratio of 42, followed by Berlin, 36; Vienna, 28, and London, 23. There were more suicides in Saxony than in any other country, 31.1 per 100,000. In Denmark the ratio was 25.8, in Austria 21.2, in France 15.7, in the German empire 14.3, and Sweden, Norway, Belgium, Great Britain, Italy, the United States and Spain followed in the order given. Can any of our social philosophers explain why the San Francisco and Los Angeles rates are higher than Chicago? The "foreign element" in Chicago, Milwaukee and Cincinnati can not explain why their rates are so much higher than New York City, where there are also large foreign populations. Does New Haven, in fact, have a higher rate than all other New England cities? And why is the rate in Minneapolis almost double what it is in St. Paul? Will the *Times-Democrat* tell us where it got its figures?—*American Medicine.*

National Charters.—Those interested in securing a National charter for the American Medical Association will be interested in Senator Elkins' bill, which has received the approval of the district commissioners; to incorporate the National Hay Association of the District of Columbia:

Be it Enacted by the Senate and House of Representatives of America in Congress Assembled: That [then follows the names of the incorporators] their associates and successors are hereby created in the District of Columbia a body corporate and politic by the name "The National Hay Association," for the purpose of advancement of the commercial interests of those engaged in the handling of hay and straw, inculcating just and equitable principles in trade; acquiring, preserving and disseminating valuable business information; establishing and maintaining grades of hay and straw and securing their adoption in different markets of the country and facilitating business intercourse. Said association is authorized to have an official emblem and hold real and personal estate in the District of Columbia so far only as may be necessary to its lawful ends in amount not exceeding $5,000, to adopt a constitution and make by-laws, not inconsistent with law. Said association shall have its principal office within the United States as it may determine and may hold its annual meetings at such places as the said corporators may determine.

The following is the National charter of the American Historical Association, known as public No. 10, and reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress Assembled: That [then follows the names of the incorporators] their associates and successors, are hereby created in the District of Columbia a body corporate and politic, by the name of the American Historical Association, for the promotion of historical studies, the collection and preservation of historical manuscripts, and for kindred purposes in the interest of American history and of history in America. Said association is authorized to hold real and personal estate in the District of Columbia so far only as may be necessary to its lawful ends to an amount not exceeding $5,000, to adopt a constitution, and to make by-laws not inconsistent with law. Said association shall have its principal office in the District of Columbia, and may hold its annual meetings in such places as the said incorporators shall determine. Said association shall report annually to the secretary of the Smithsonian Institution concerning its proceedings and the condition of historical study in America. Said secretary shall communicate to Congress the whole of such reports or such portion thereof as he shall see fit. The regents of the Smithsonian Institution are authorized to permit said association to deposit its collections, manuscripts, books, pamphlets, and other material for history in the Smithsonian Institution or in the National Museum, at their discretion, on such conditions and under such rules as they shall prescribe.

The general impression is that the Elkins bill will not become a law.

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TROPICAL MEDICINE.

The problems of tropical medicine are becoming of more importance each year with both the profession and the public. The world is filling up, population is spreading over the known habitable regions and the call is ever for more territory for civilized man to conquer. Even on this continent the land hunger is no longer appeased except by encroaching on the semi-arid regions of the west or the sub-arctic territories to the north. The improved means of communication have brought all countries nearer together and the tropical regions of the world are thus made our immediate neighbors and common resorts for vacation excursions. Nearly every civilized country, too, has now its tropical dependencies or is seeking for such. Our own country is no exception, the problem comes home to us now and will be of still more importance as the years go by.

The two chief questions are, 1, the habitability of the tropics by the white race, and 2, the introduction of parasitic tropical disorders into the temperate regions by means of the increasing intercourse and facilities of communication. As regards the first of these, it was maintained in 1898 by such experts as Sambon and Manson that the acclimatization of the white races in the warmer regions of the earth was a practicable possibility. There was, they held, no adequate reason why white men might not live comfortable and useful lives in tropical countries; and the special disorders that have been considered as preventing this were themselves almost universally parasitic and preventable. Any special racial immunity to them was really an acquired one, and there was no reason why, with our increasing knowledge of these disorders, they might not be met and overcome by proper sanitary measures, and why the individual might not also acquire a like immunity. Race deterioration, according to Sambon, is a far more serious question in the crowded urban population of our great centers of civilization than in the tropics, and we have abundant instances of the ability of right-living whites to exist and prosper by their labor under a tropical sun.

Sambon could hardly have fully foreseen how completely his anticipations have been realized, in the phenomenal increase of our knowledge of tropical diseases and of the means to prevent them since 1898. Within that five years or less we have learned in a great measure how to meet and conquer malaria, the chief of the captains of death in tropical regions; yellow fever, which in its more limited scope was even a worse scourge than malaria, has been shown to be preventable; the causes of tropical dysentery and tropical anemia have been elucidated and the acquisition of the successful methods of their prophylaxis and treatment seems only a matter of time. The success of sanitation in Havana, formerly a typical tropical city in its unhealthfulness and now with a mortality rate below that of many northern cities, is an object lesson of what may be done elsewhere, and almost in itself an answer to our first question, "are the tropics habitable by civilized man?"

The second question is one that directly affects us at our homes. With the yearly increasing intercourse with all parts of the globe, it is becoming impossible to absolutely shut out disease from other regions, even with the strictest quarantine. More and more of our people are residing temporarily or traveling in tropical countries and returning, bringing with them the diseases they may have contracted. Moreover, not all the disorders that we call tropical are strictly such. We find that Shiga's bacillus is the cause of much of our prevailing or locally epidemic bowel disorders in our own climate; uncinariasis, with its attendant anemia, is prevalent in our southern states, and malaria even in its pernicious estivo-autumnal type, may occur almost anywhere within our own borders. American physicians will from this time on have more experience with these disorders and greater need of knowledge for their recognition altogether apart from the possibility of their having to deal with them in actual tropical practice. Admitting that the data already obtained will make them comparatively manageable, there is the constant possibility of new problems arising. We can not bring at once all parts of the world under good sanitary conditions, and there will always be reckless individuals neglectful of hygiene, therefore the worst possibilities are always to be considered. Eternal vigilance is the price of public health as well as of our liberties, and we will do well to consider this fact, even as regards the disorders (so-called) of the tropics in our temperate climate.

With all these facts the importance of the study of these disorders is obvious. Whether they should be kept apart from diseases generally met or be reserved as a subject for special study is a question that might have been raised, but one that to a certain extent has been already answered in England where schools of tropical medicine have been in successful existence for some years. In this country little has been done, so far as treating the subject as a specialty is concerned, though we owe some of the best conducted and most fruitful investigations to our own countrymen. In one or two medical schools chairs of tropical medicine have been arranged for and others will probably follow the example. The subject is one that could appropriately occupy the attention of the American Medical Association at the coming meeting, occurring as it does in the subtropical section of the United States. Whether a special section

on tropical medicine should be constituted or whether the subject should be assigned to a subsection of one of those already organized is a matter for discussion and future settlement. For several reasons we believe that it would be unwise to create a new section, but that it should be made a subsection of that on hygiene and sanitary science. Tropical medicine, however, can not well be overlooked in any future program of the Association.

THE IMPROVEMENT OF THE MEDICAL AND SCIENTIFIC WORK IN OUR HOSPITALS FOR THE INSANE.

There seems to be a general desire among those interested directly in the medical work in the hospitals for insane to raise the standard of that work, to do something to prevent the physicians from falling into mechanical routine, which is the bane of institutional life as ordinarily lived. For some time there has been apparent a general effort to introduce into state hospitals for the insane systematic pathologic work. Pathologic laboratories have been equipped and special pathologists appointed to make postmortem examinations and microscopic and other studies of the accumulating material. This is certainly a gratifying step in advance. The introduction of any form of scientific activity into these institutions can not but produce a stimulating effect on the medical staffs in general. But it is quite evident that the renaissance of the medical and scientific work of the hospitals for insane can not be accomplished by this movement alone. Indeed, mutterings are heard to the effect that purely pathologic work is not yielding all that was hoped from it; and the reason assigned for this disappointment is that the clinical work as generally done is wholly inadequate to furnish any satisfactory foundation for truly valuable pathologic studies. What is the use of making postmortems and cutting sections of nervous tissue so long as there are no systematic, reliable clinical observations with which the results of pathologic inquiry may be correlated? The reasons usually given for the shortcomings of the clinical work in its various aspects are that the medical officers of the hospitals lack proper training in neurologic and psychiatric methods and that their duties are so varied and onerous that time and energy do not suffice for anything more than the veriest routine. In the present organization of the staffs of the hospitals for the insane there is placed at the head of the whole a superintendent who, though a medical man, is held strictly responsible for every detail in the management. His prime object soon becomes to so conduct his institution that there is a reasonable freedom from gross scandal. Even with the very best of intentions he can not personally direct and train his assistants. These are left to their own devices and assigned to fixed, independent services without time or equipment to make real, systematic, unprejudiced studies of the cases placed under their care.

Evidently there is need for a reorganization of the medical staffs. More physicians must be employed, provisions must be made for their special training, and the medical services must be placed under competent heads with regularly subordinated assistants. Much of the work now done by hospital physicians is not of so strictly medical a character but that it can be done just as well by intelligent persons without medical training. Reforms along these lines might help to bring into the institutions something of that scientific spirit which is needed to overcome the benumbing influences of institutionalism and the tendency routine has to arrest intellectual development. We believe that these suggestions find a sympathetic ear in the conscientious hospital physician and in the public-spirited hospital trustee. In order to secure for the physicians special training in neurology and psychiatry, a training that the medical schools can not furnish at the present time, the most that can be expected being a general preparation for it by thorough schooling in the fundamentals of medicine, each state should organize special institutes manned by specially qualified teachers and thoroughly equipped for scientific clinical and laboratory work. In each of the larger, older states there are now two, three, and even more large hospitals for the insane. At present there is a growing tendency to centralize the administrative management of the state institutions, and the next step in the evolution of the state care for insane should be in the direction of centralization of the medical and scientific work in the manner outlined by the establishment of special psychopathic hospitals and institutes for the proper training of the physicians for all the hospitals in the state. The United States Army maintains an Army Medical School at Washington where the medical officers are given special training and to which they are detailed from time to time for instruction by special courses.

It is something on this plan that we have in mind for the men in the service of the state hospitals for insane. There is no reason except ancient custom why the assistants in the state hospitals should remain so fixedly attached to one institution as is the vogue now. It would seem practicable to place the entire personnel of the various medical staffs of the hospitals of a state under a central management that could distribute the physicians among the different institutions according as the good of the service and the special requirements sure to arise from time to time would indicate. The introduction of this principle would give to the hospital services a feature of elasticity that probably would prove beneficial alike to the hospitals and to the individual physicians. Then again, as men with special aptitudes were discovered and developed, their work could be encouraged by leaves of absence from regular duty, but with pay, for the purpose of special study at suitable places at home or abroad. Certainly the state could do much to raise the standard of the medical work in its hospitals for insane by careful organization of the medical services as a whole with a central institute at the head and by reorganization of the services in the single

hospitals along lines that tend to lift up the more purely clinical side as well as the pathologic. Conditions would then be established that would favor directly the growth of scientific work in the hospitals.

THE DEADLY HEADACHE POWDER.

Powders containing acetanilid, sold indiscriminately by the drug stores and used universally, possess dangers other than those due to their depressing effect on the heart, which in several instances has led to sudden collapse and even death. Acetanilid, and other substances of similar nature, have a marked hemolytic effect which is of great importance when this sort of medication is long continued. Stengel and White[1] have published a most instructive case-report, illustrating the very serious results that may follow drug taking of this kind. A young woman who had been suffering for four years from infradental neuralgia, developed severe symptoms that seemed of cardiac origin. She became extremely cyanosed; her lips, fingernails and toenails were dark blue or almost black. The heart's action was rapid and very weak, but in spite of all the cyanosis there was no dyspnea or edema, suggesting that cardiac incompetence was not the fundamental difficulty. Examination of the blood showed at one time but 2,092,300 erythrocytes, and 35 per cent. hemoglobin. There were 71,400 nucleated cells, of which no less than 32,323 were nucleated red corpuscles. Of course, all sorts of abnormal forms of erythrocytes accompanied this picture. Hemoglobin and hematin were present in the urine. For some time it was impossible to prove the origin of this severe anemia in drug taking, for not only did the patient deny the use of remedies, but her brother, who was a physician, was certain that the cyanosis was not due to a drug. At last, however, a box of capsules containing the familiar "headache and neuralgia" compound, acetanilid, caffein and bicarbonate of soda, was received by the patient, and eventually she confessed that for four or five years she had taken such compounds.

The secret way in which the headache powders had been taken, deluding even the patient's physician-brother, is very interesting, indicating that the victim of such a habit is not far removed from the morphin fiend. It suggests the possibility of similar cases existing in larger numbers than we appreciate, for in this case it is certain that the origin would not have been detected but for the careful blood examination and the deductions from its results. The changes in the blood were so characteristic of the action of a hemolytic agent, and so resembled those seen in the few accurately reported cases of poisoning by anilin derivatives, that the denials of both the patient and her brother were unable to draw the observers from the right track.

The effects of acetanilid, phenacetin, nitrobenzol and other poisons of the same nature are well known. Among the symptoms described are cyanosis, profound depression or collapse and unconsciousness; but, as a rule, dyspnea and subjective symptoms have been slight or wanting. There have been few chronic cases, similar to that of Stengel and White, reported as yet, but we suspect that they are not uncommon. In those so far studied the characteristic changes have been in the blood, including the presence of all sorts of altered red corpuscles, with great numbers of nucleated erythrocytes. In one case the proportion of the nucleated forms was as high as one to fifty-six of the non-nucleated.

1. Univ. of Penn. Medical Bulletin, 1903, xv, 462.

THE BUSY PRACTITIONER AND HIS OPPORTUNITIES.

We called attention some months ago[1] to the emptiness of the excuse given by a class of busy practitioners for their failure to interest themselves in what concerns the general good of the medical profession, such as society work, medical legislation and the like. They are, forsooth, too busy with their practice. For such men, as well as for the busy physician who faithfully tries to fulfill his duties to the profession and feels all the responsibilities of his professional work, a reference to some things that have been accomplished for clinical medicine by physicians in active practice may prove an inspiration. The "busy" man is apt to think that he should be exempt from the obligation of trying to extend the bounds of medical knowledge. His occupation, he may claim, is a practical application of the discoveries of others. Active practice absorbs so much energy and time as to leave none for anything beyond his patients and their immediate needs, and certainly no opportunity for original work. It used to be the excuse of the medical college professor that he had to devote so much time to teaching and practice that he could not be expected to do any investigating. Now it is recognized that only he can teach well who is himself doing original work.

Only the physician who so carefully examines his cases that he sometimes makes observations not to be found in the text-books, is doing his patients justice and keeping himself up to date. It is the men who thus impress their personality on medicine that receive the highest rewards of the profession, the confidence of their fellow practitioners—and frequent calls in consultation. Most of the great advances in medicine have come, not from ambitious theorists, but from the carefully recorded observations of the general practitioner.

The great principle of the conservation of energy was discovered by Robert Meyer while ship surgeon on a vessel in the Dutch East Indies. He observed during the practice of venesection that the venous blood drawn in the tropics was much redder than that he had seen in colder climates. He argued that this was due to the fact that less oxidation took place in the blood in tropical countries, because less work was demanded of it in keeping up the heat of the body. The surrounding air accomplished the purpose of heat production and so saved oxydizing processes in the blood. From this simple observation to the magnificent generalization of the con-

1. THE JOURNAL A. M. A., July 12, 1902, p. 84.

servation of energy seems a far cry, yet the basic principle of modern physics lies in the simple problem whose solution the young German physician grasped so clearly.

Morgagni, whom Virchow greeted as the Father of Modern Pathology, was first of all a clinical observer, a careful student of the cases that came under his observation. His pathologic studies were always directed to the better understanding of his clinical cases, and that is what makes his great work of such practical value. Auenbrugger, the discoverer of percussion in the investigation of thoracic disease, was a simple practitioner of medicine all his life. While Auenbrugger was doing his great work in Austria Jenner was preparing for his in England. Jenner was just a country practitioner, but, in spite of all the *laissez aller* that term is supposed to imply, he was one of the keenest of observers. When he told the famous John Hunter of the popular belief in Gloucestershire that cowpox protected against smallpox, and that the subject seemed worth thinking about, Hunter blurted out, "Don't think, investigate." Laennec, his illustrious contemporary, the discoverer of auscultation, the greatest physician of the nineteenth century and one of the four or five greatest geniuses in the history of medicine, was just a medical practitioner with a hospital service. He took for the motto of his immortal work on auscultation the Greek maxim, "The most important part of an art is to know how to see things." Bright and Graves and Addison were busy physicians in the best sense of the term, yet were faithful observers who paid proper interest on the medical knowledge lent them, by handing it on notably increased in value to their successors. And there is yet, and ever will be, a place in the footsteps of such men for the earnest busy practitioners of this and every generation.

A TRAVELING POST-GRADUATE SCHOOL.

The German newspapers have recently announced the preliminary preparations for a migrating post-graduate school under the special auspices of the German government, which shall go from town to town away from the medical centers, carrying with it a museum and sufficient material to be of advantage for instruction and to include among its lecturers some of the leading lights in medicine and surgery in Germany. The idea of this seems to be the better education of the local physicians, who for various obvious reasons can not take a post-graduate course at the university. The mountain will go to Mahomet in this case. The project has the support of the emperor and is to perpetuate the name of the Empress Frederick and to be largely supported by government aid. As we understand it, the instruction is to be gratuitous for such physicians as attend. There is much that seems admirable in this plan, and it is to be hoped that it will develop into all that its well-wishers can desire. The German physicians will have the university brought to their very doors. It is, in fact, a special adaptation of the university extension idea applied to medicine and medical instruction; a proposition that can be carried out in this country by the profession itself when a little better organized.

AN EXTENSIVE BUSINESS IN PROPRIETARY MEDICINES.

The extent of the proprietary medicine trade is well illustrated by a recent statement in the *New York Commercial,* in its Indianapolis dispatches, that the latter city can, when running its manufactories at full capacity, supply annually over 21,000,000 ordinary barrels of remedies—of all kinds, we presume. It claimed in the dispatch that Indianapolis is the great medicine manufacturing city of the country and supplies not only the adjoining states, but more remote regions and even foreign countries. How much the popularity of patent medicines is due to the alcoholic contents of many of the nostrums it would be hard to say, but undoubtedly they go a long way in satisfying the appetite that for conventional, social or legal reasons can not be fully gratified otherwise. If the statements are true as regards this one city, what can we calculate as the drug output of the country as a whole? Making all due allowances for exaggeration the reality must be a sufficiently formidable one to give rise to some serious consideration.

THE MICHIGAN STUDENTS' PROTEST.

The proposed medical practice act for Michigan, which is intended to put the law there on the same plane as it is in other progressive states, is receiving opposition from the students of certain medical colleges of that state. These students object to passing an examination after obtaining a diploma, holding that the state, by the incorporation of these institutions, entered into an agreement with them by which they should have in their diploma the necessary qualifications for a license to practice without having to undergo an examination. Being graduates of Michigan colleges they think they ought to be favored above those who obtain their diplomas elsewhere. As far as we have been able to learn, they do not claim that their colleges are better than those in other states, or that they themselves are better educated. It certainly can not be possible that they are willing to let it be thought that they have a lack of confidence in themselves and in their medical scholarship or that they wish to cast any reflection on their alma mater by this plea for exemption from the state examination. And yet this is what one would naturally surmise. These students, it is said, are sending delegations to Lansing to lobby against the act. What influence they may have is more than can be foretold, but it is to be hoped that they may soon see the folly of this exhibition of selfishness, not to use a stronger term. These students seem to ignore the fact that this same fight has been made under similar conditions, and with like arguments, in other states, and without success. A funny condition would soon prevail if graduates of a medical college in a given state were to be exempt from the laws that applied to graduates from outside colleges. We hope the students of the Michigan medical colleges will see the unwisdom of their action and assist, rather than oppose, those who are fighting for the elevation of the standard of the profession which they are about to enter.

Medical News.

CALIFORNIA.

Jury Disagrees.—The jury to which was committed the case of Mrs. Julia Tickel, known as Mrs. "Dr." Jones of Fresno, charged with causing abortion, was unable to agree and was discharged.

Physician Wins.—In the case of Dr. Jacob H. Parseghian, Fresno, against H. Azhderian, for medical attendance furnished the son of the latter, the decision was in favor of the plaintiff for $400.

Indicted Optician Escapes.—A warrant was recently issued in Bakersfield for the arrest of C. Belmont, an optician, who, it was alleged, had practiced medicine without first registering his diploma. On attempting to serve the warrant, the constable discovered that the accused had gone to Los Angeles.

San Francisco Deaths.—During February 633 deaths were reported, which, after the deduction of 57 due to violence, leaves 576, equivalent to an annual death rate of 16.84 per 1,000. In February, 1902, the rate was 18.79 per 1,000. The principal causes of death were: Tuberculosis, 95; heart disease, 94; pneumonia, 61; Bright's disease, 42; cancer, 28; accident, 36; diphtheria, 14; suicide, 15; homicide, 6.

To Restrict Practice of State Employes.—The resolutions recently adopted by the San Joaquin Medical Society, directed against private practice by the physicians at the state hospitals, have been crystallized into a bill which has the following provisions:

The medical superintendents and assistant physicians of the several state hospitals for insane persons must not engage in the private practice of medicine, but must devote their whole time to the performance of their duties, unless granted leave of absence by the board of directors. If any of such physicians shall engage in the private practice of medicine his office shall thereon become vacant, and the board of directors, or other appointing power, shall immediately appoint some qualified person, other than the officer whose office shall have become so vacant, to fill such vacancy.

COLORADO.

New County Hospital Staff.—The new staff of the Arapahoe County Hospital is made up as follows: Medicine, 9; surgery, 8; obstetrics, 3; gynecology, 3; eye and ear, 4; nose and throat, 1; nervous and mental disease, 3; orthopedics, 1; dermatology, 2, and pathology, 2.

Denver Health and Deaths.—The deaths during January numbered 235, equivalent to an annual death rate of 17.09 per 1,000. Tuberculosis caused 58 deaths; pneumonia, 30; inanition, 10, and violence, 9. Infectious and contagious diseases were reported as follows: Scarlet fever, 85; diphtheria, 69, and smallpox, 34.

State Vital Statistics.—The total deaths for January were 856, equivalent to an annual death-rate of 17.47 per 1,000. Typhoid fever caused 23 deaths, diphtheria 12 and scarlet fever 7. During the month, 279 cases of smallpox were reported, 78 of which were from Yuma County, 48 from Rio Blanco County, 47 from Otero County and 60 from Arapahoe County; 206 of scarlet fever, and 135 each of diphtheria and typhoid fever. Compared with December, 1902, January shows a decrease of 43 cases of diphtheria, an increase of 49 cases of scarlet fever and 153 cases of smallpox, and a decrease of 107 cases of typhoid fever.

DISTRICT OF COLUMBIA.

Health of the District.—The report of the health officer for the week ended February 28 shows the total number of deaths to have been 161, of which 91 were white and 70 colored; births, 116; number of cases of typhoid fever, 91; scarlet fever, 10; diphtheria, 6, and smallpox, 10.

Appropriation for Hospitals.—Congress has made an appropriation of $100,000 for the Providence Hospital, and $1,000 for the Garfield Memorial Hospital; $15,000 for the Washington Asylum Hospital, and $99,000 for the Government Hospital for the Insane, with $11,500 for a subway connecting the various buildings.

ILLINOIS.

Chicago.

Augustana Addition.—The long-planned addition to Augustana Hospital is to be erected this spring at a cost of $100,000. It will be fireproof, six stories high, and 110 by 130 feet.

Two Hospitals Fined.—Fines of $50 each were imposed on the Chicago Hospital and the Norwegian (Tabitha) Hospital, for violations of the city ordinance regarding elevators and elevator shafts.

Smallpox.—During the week seven new cases were reported. Only one patient, an adult, had been vaccinated, and he in infancy. No case of smallpox in a revaccinated person has been found in Chicago for years, says the department of health.

Deaths of the Week.—During the week ended March 14 631 deaths were reported, an increase of 6 per cent. over the mortality rate of the preceding week, and of nearly 10 per cent. over that of the corresponding week of 1902. Pneumonia led with 133 deaths, and consumption followed, with 60. Violence caused 20 deaths and suicide 17.

Vacuum Cleaning.—The department of health advocates the vacuum method of cleaning sick-rooms, saying that "consumption, pneumonia, influenza, scarlet fever and similar diseases are known to be spread by infected dust of the sick room, so the distinct and recognized purpose of the operation shall be to remove and not simply to stir up the ever-gathering dust.

Scarlet Fever Closes Lake Forest University.—Because of the continuation of the epidemic of scarlet fever at Lake Forest, the university will be closed for two weeks. The quarantine on the university grounds has prevented an extension of the disease among the students, but it is spreading in the town. No public meetings will be held. Most of the new cases have been in families where the disease already existed. No new case has occurred among the university students for about eight weeks.

IOWA.

Verdict for Defendants.—In the suit for $5,000 damages brought against Drs. Thomas J. and John R. Maxwell, Keokuk, by Mrs. Theresa Winkler, who alleged that the defendants removed a portion of her husband's brain during an autopsy and did not return it, the plaintiff was non-suited.

Resignations.—Dr. Lewis Schooler, Des Moines, for 19 years dean of Drake University medical department, has resigned, and Dr. A. Raymond Amos, now secretary, has been elected to succeed him. Dr. Schooler will retain the chair of surgery in the college.——Dr. Francis M. Powell, superintendent of the Iowa Institution for Feeble-Minded Children, at Glenwood for more than 20 years, has resigned on account of failing health.

Commendable Fraternity.—All but four of the physicians of Hardin County have joined in a petition with the object of aiding Dr. William E. Marsh of Eldora, who has become nearly blind. The petition asks the appointment of Dr. Marsh as the county physician employed each year to treat the poor of the county. In asking this appointment, the physicians agree to give their services whenever called on by the county, that is, to do Dr. Marsha's work for him. The salary is $800 a year. Four physicians declined to join in the petition and filed individual bids seeking the appointment as county physician for themselves.

Itinerants Must Leave State.—The State Board of Medical Examiners is announced to be about to undertake a crusade against the itinerant practitioners who infest the state.——R. D. Rea, recently fined at Emmetsburg for practicing medicine without an itinerant doctor's license, has combined with about 75 other specialists of his kind, retained an attorney and proposes to carry the case to the Supreme Court of Iowa, or if necessary to the United States Supreme Court.——G. H. Heath, a magnetic specialist who travels with his wife, a clairvoyant and another woman, a complexion specialist, was arrested at Boone, on the charge of being an itinerant practitioner without a license, and was bound over to await the action of the grand jury.

KANSAS.

Personal.—Dr. George C. Purdue and family, Wichita, are taking a trip to the south and Cuba.

Hospital Fire.—A fire at the Pittsburg City Hospital, February 21, damaged the building to the extent of about $1,000, but caused no casualties.

Patent Medicine Bill Dead.—This bill, which turns up at every session of the legislature, has been referred by the senate committee on hygiene and public health to its introducer, Senator Gabriel, for revision, and the senator declares that he will not reintroduce it.

To Prevent Marriage of Defectives.—The O'Donnell marriage bill passed the house, February 23, by little more than a majority. The bill in full is as follows:

Section 1. No woman under the age of 45 years or man of any age, except he marry a woman over the age of 45 years, either of whom is epileptic, imbecile, feeble-minded, or afflicted with insanity,

shall hereafter intermarry or marry any other person within this state. It is also hereby made unlawful for any person to marry any such feeble-minded, imbecile or epileptic person or any one afflicted with insanity, or any person who has ever been so afflicted. Children born after a parent was insane shall not marry except under the above named conditions.

Section 2. No officer authorized by law to issue marriage licenses in this state shall hereafter issue such a license to any persons either of whom is afflicted with any of the diseases mentioned in Section 1 of this act, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Section 3. No clergyman or officer authorized by law to solemnize marriages within this state shall hereafter perform a marriage ceremony, uniting persons in matrimony, either of whom is afflicted with epilepsy, imbecility, feeble-mindedness, or insanity, knowing them to be so afflicted, unless the female party to such marriage is over the age of 45 years.

Section 4. Any person violating any of the provisions of this act shall on conviction thereof be punished by a fine of not more than one thousand dollars or by imprisonment in the state's prison for not more than three years, or by both such fine and imprisonment.

MARYLAND.

Smallpox.—There have been 5 cases of smallpox at Aberdeen, Harford County, and the public school and churches have been closed. The first case was imported from Delaware, and was so mild as to be unrecognized. A case has also appeared at Havre-de-Grace in the same county.

Hospital Reports.—According to the annual report of the Cambridge Hospital 529 patients, 397 white and 132 colored, were treated during the year. Fourteen deaths occurred and 265 surgical operations were performed.——There are 484 patients in Maryland Hospital for the Insane, No. 2. The new cottage for epileptics will be commenced early in April.

Baltimore.

Personal.—Dr. Joseph E. Clagett was stricken with apoplexy on March 9.——Dr. Annie G. Lyle, a graduate of Johns Hopkins, 1902, has been appointed assistant to Dr. Esrech at the University of Vienna.——Dr. Martin B. Tinker, assistant resident physician at the Johns Hopkins Hospital, has resigned.

Anti-Tuberculosis Crusade.—A large meeting of physicians and others interested in the anti-tuberculosis crusade, was held, March 10, under the auspices of the State Tuberculosis Commission. The city is to be divided into 8 or 10 districts, and agents will visit houses in which there are cases of consumption. Dr. Fulton emphasized the influence of infected houses. Dr. H. W. Buckler spoke of the need of a state institution and said the dispensaries should not treat cases of consumption as it is spread thereby.

Mortality and Smallpox.—The mortality was unusually large last week, being 231, equivalent to an annual death rate of 21.95 per 1,000. Among the deaths were 41 from pneumonia, 11 from bronchitis, 7 from measles and 9 from la grippe. Five new cases of smallpox were reported. The earlier cases were treated as chickenpox by a colored practitioner and there was free intercourse between the patients and a large number of persons who frequented the house. There is considerable likelihood of an epidemic, and the health department is taking extreme precautions.

MASSACHUSETTS.

Tribute to Dr. Gage.—On the resignation of Dr. Thomas H. Gage from the board of trustees of the Worcester Insane Hospital, after a continuous service of 27 years, the board passed resolutions testifying to the faithful, intelligent and valuable service rendered by Dr. Gage to the institution.

Illness at Harvard.—Dr. Marshall H. Bailey, Cambridge, medical visitor to Harvard, reports 5,388 cases of illness during 1902. Nearly a third of the patients merely reported themselves ill and did not wait for any examination or treatment. There were very few serious diseases, throat disorders leading with 307 cases of laryngitis and 185 of tonsillitis.

State Manufacture of Antitoxin and Vaccine.—Two bills are before the public health committee regulating the manufacture of antitoxin and vaccine by the state. The former has been furnished to physicians free by the State Board of Health and has been highly efficient. A movement to have the product put in charge of the State Board of Agriculture is opposed by physicians and druggists alike. It seems probable that a bill will be reported which will put both of them under the control of the State Board of Health.

One Lesson Not Enough.—Dr. Immanuel Pfeiffer, Boston, who so narrowly escaped death from smallpox last year as a result of his obstinate opposition to vaccination, has appeared before the Massachusetts Legislation Committee on Judiciary with a petition that no person shall inject into the body of another person any poison or poisonous substance without the consent of the person operated on. His appeal to lawyers instead of physicians on a matter which concerns public health, shows how few are the medical men who support Dr. Pfeiffer's views in Boston.

MICHIGAN.

Personal.—Dr. Charles G. Jennings, Detroit, has been appointed a member of the State Board of Health.——Dr. Howard A. Grube, major and surgeon, U. S. V., who has served for five years in the Philippines, has returned to Coldwater.

In Trouble.—A. W. Van Bysterveld, Grand Rapids, fined $100 and costs at Grand Rapids for practicing medicine without a certificate, has, it is said, evaded the law by associating with him Dr. George R. Adkin, who, being a legal practitioner, writes prescriptions, the "miracle-worker" keeping officially in the background.——Henry Salisbury, Belding, charged with practicing medicine without a license, pleaded guilty, and was fined $10 and costs.

"Mail Cure" Healers Convicted.—Drs. James M. Peebles, Walter T. Bobo and Charles M. Green, of the "People's Institute of Health," Battle Creek, have been convicted by a jury in the United States District Court, Detroit, of violating the postal laws, by advertising mental cure by mail for all manner of ills. One of the defendants admitted that if a patient at a distance managed to procure Dr. Peebles' signed instructions and followed them faithfully the cure would not be effective if the patients had not paid the fee of $1. A thirty-day stay of proceedings was granted.

Prevalence of Disease.—For February, 1903, compared with the average for February in the 10 years, 1893-1902, scarlet fever, measles, smallpox and whooping cough were more than usually prevalent; and consumption, intermittent fever and remittent fever were less than usually prevalent. For the first time this season, influenza headed the list of those diseases which usually cause the most sickness in Michigan, but was 14 per cent. less prevalent than the average for February in the preceding ten years. Bronchitis, rheumatism, neuralgia and pneumonia were also less prevalent than usual.

The Most Dangerous Communicable Diseases.—Meningitis was reported in Michigan during February, at 9 places; whooping cough at 46 places; diphtheria at 77 places; typhoid fever at 89 places; measles at 103 places; scarlet fever at 179 places; consumption at 193 places, and smallpox at 201 places. Meningitis was reported at 2 places more; whooping cough at 9 places more; diphtheria at 3 places less; typhoid fever at 6 places less; measles at 2 places more; scarlet fever at 6 places less; consumption at 76 places less, and smallpox at 15 places less, in February, 1903, than in the preceding month.

Smallpox Suits.—Seron Bartow has entered suit against Dr. Robert B. Bennett Brant, for $5,000, alleging that he "falsely and wickedly gave it out on two occasions that members of the plaintiff's family had smallpox, thereby causing the family to be quarantined for 71 days, preventing him from attending to his duties as a farmer and depriving him of the companionship of his friends and neighbors. The value of this he estimates at a little more than seventy dollars a day. ——Dr. Curtis T. Wolford, Grand Rapids, has been charged by Dr. Thomas M. Koon, health officer, with having failed to report to the health office a case of smallpox.

The Nottingham Bill.—The bill—which we have editorially mentioned—in amendment of medical registration, introduced by Dr. D. M. Nottingham, Lansing, is designed by its author to raise the standard of examination and require all graduates to pass an examination before the medical board, irrespective of what college they come from. It will also favor reciprocity with other states. It is also designed to make the standard of entrance to medical colleges higher, as it requires that the candidate for entrance to such college shall have at least a high school diploma or its equivalent, according to the idea of the board of registration. A vigorous protest has been entered against the bill by the students of the three medical colleges of Detroit, who sent a delegation to Lansing, February 16, to present their protest before the Committee on Public Health of the legislature.

February Mortality.—The total number of deaths reported for February was 2,756, or 100 fewer than the number of deaths in the preceding month. The death rate was 14.4 per 1,000 population, as compared with 13.5 in January. The mortality was slightly higher than that for February of the preceding year. There were 559 deaths of infants under 1 year, 175 deaths of children aged 1 to 4 years, and 874 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 217; pneumonia, 372; typhoid

fever, 34; diphtheria and croup, 52; scarlet fever, 16; measles, 17; whooping cough, 31; influenza, 73; cancer, 126; accidents and violence, 134; smallpox, 5. There was a decrease in the number of deaths from typhoid fever and scarlet fever, while the number reported from influenza was nearly double the number in January. The death rate from this cause, however, was not as high as during the same time last year.

NEW YORK.

Dr. Scollard's Estate.—The will of the late Dr. James I. Scollard, Clinton, was admitted to probate, March 7. The estate, valued at $210,000, is left to the family.

Personal.—Drs. Henry A. Gates, Delhi; Grant C. Madill, Ogdensburg, and Frank W. Sears, Binghamton, have been appointed consulting surgeons to the New York State Hospital for the Care of Crippled and Deformed Children, Tarrytown.

Polluted City Ice.—So much polluted ice is brought to New York City from the Hudson River that a bill has been introduced in the legislature prohibiting the cutting of ice for domestic use between Waterford and Coxsackie on that river, or within 3,000 feet below any town of more than 10,000 inhabitants on said river.

To Protect Buffalo.—State Commissioner of Health Daniel Lewis has appointed Drs. Walter D. Green and Edward Clark health commissioner and assistant health commissioner of Buffalo respectively. This action was taken in order that proper authority might be given to the Buffalo health authorities to protect Buffalo from the source of typhoid fever infection in West Seneca just outside the city limits of Buffalo and outside the jurisdiction of the Buffalo health authorities unless especially vested with power.

New York City.

Enforce Sanitary Crusade.—On March 11, about fifty policemen of Brooklyn were kept busy arresting those who violated the law against expectorating in public places. Up to noon, 14 offenders were arrested, admonished, and paroled until April 2.

Physicians in Insurance Frauds.—In connection with the unearthing of extensive frauds against life insurance companies two physicians, practicing in this city have been indicted: Albrecht Loewit, of 1,833 Lexington avenue, who is out on $5,000 bail, and Francesco Nucci, of 2,072 First avenue, who has furnished $2,500 bail.

Glanders in the City.—According to United States officials there are many cases of glanders in this city, though the records of the health department do not support this contention. Strict quarantine is placed on all infected stables, and every horse in the stable is tested with mallein and his temperature observed for two days before the quarantine is raised. Special attention is given to stables where the horses of milk dealers are kept.

Society Protects Members.—The first case in which the New York State Medical Association assumed the defense of a member sued for malpractice was tried in the Sixth District Municipal Court, March 10. The plaintiff, husband of a patient of Dr. Joseph E. Janvrin, sued the latter for malpractice, alleging the discovery of some error in treatment. This suit followed hard after one in which the physician was the plaintiff and the cause was the non-payment of his bill. Dr. Janvrin won this suit, and the suit for alleged malpractice was also decided in his favor.

Betterment of the Consumptive.—A new sun parlor, costing $10,000, is to be erected on Blackwell's Island for the use of the consumptives there. It will be a one-story structure enclosed in glass on all four sides, and furnished with reclining chairs and sofas. The Tuberculosis Committee of the Charity Organization Society has planned a country sanatorium on a large scale, which shall have permanent buildings, farms and a tent encampment, and shall accommodate 500 patients. Out-door occupation is to be provided for the men on the farm, and for women in horticultural pursuits. It is estimated that the cost will be $530,000, which is thought to be reasonable enough in view of the fact that it has been computed that the total annual loss to the city from tuberculous diseases is at least 23 million. The health department says that an appropriation of only $40,000 will be asked for to begin with, and that it is hoped that the sanatorium may be ready by the middle of June. The society favors some location in Westchester county, while the health authorities are disposed to select a site in Orange County a short distance west of Tuxedo. For a year past the House of Rest for Consumptives has been engaged in remodeling a mansion in that part of the city known as Inwood, for a tuberculosis hospital. This has developed a strong opposition among the wealthy residents in that vicinity, and a physician is aiding this opposition by calling attention to the danger of spreading tuberculosis among the residents near the proposed hospital.

Buffalo.

Personal.—Dr. Burt C. Johnson and Dr. Harry Meade sail for Europe to-day.

Unsanitary Barbers.—Several Italian barbers have been convicted for violation of the ordinances in conducting unsanitary barber shops.

Fatal House-to-House Distribution of Samples.—A three-year-old girl died from the effects of eating sugar-coated pills that were distributed from house to house. The health commissioner is making a thorough investigation of the case.

OHIO.

Scholarship for Physicians' Daughters.—Dr. Elizabeth L. McMahon, Marion, in her will, which has recently been filed for probate, left $8,000 to found a scholarship in Vassar College for daughters of deceased physicians.

Much Typhoid.—Cleveland had more cases of typhoid reported in the week ended February 28 than in any similar period in her history. In the corresponding week of 1902 there were 8 cases; in 1903, 109 cases. The mortality from typhoid for the week was 6.

Abortionist Sentenced.—Dr. H. Negley Teeters, Steubenville, charged with having caused the death of Miss Grace Goodlin of Empire, by a criminal operation, pleaded guilty and was sentenced on March 3 to imprisonment for four years in the penitentiary.

The State Board's Report.—The annual report of the State Board of Medical Registration and Examination shows that certificates were issued during the year as follows: To Ohio matriculates, 323; to graduates on examination, 62; to midwives, 3; to osteopaths, without examination, 120; to osteopaths, with examination, 1. Nineteen applications were rejected, and 13 applications of osteopaths. Two certificates, those of Dr. A. E. Hoskinson and Dr. C. F. Crookes, both of Columbus, were revoked during the year. There were 18 prosecutions under the medical law.

Personal.—Dr. Raymond E. Whelan, who has been serving as captain and assistant surgeon of volunteers in the Philippines, has retired from the Army and will resume practice in Youngstown.——Dr. William A. Burns, Dayton, has been appointed captain and assistant surgeon, O. N. G., and assigned to the Ninth Battalion.——Dr. James Wilson McMurray, Marion, has been appointed inspecting physician for the State Board of Health.——Dr. Henry M. Taylor, Columbus, has returned from California, but will not resume practice on account of continued ill-health.——Dr. Robert E. Swigart, Tiffin, has accepted the position of physician for a large fruit company at Bocas Del Toro, Columbia.

PENNSYLVANIA.

Abortionists Convicted.—Drs. Edwin S. Cooper and J. P. Haun, New Castle, were recently convicted of conspiracy in connection with criminal treatment which led to the death of Mabel Williams of Johnstown.

To Make Barbers Clean.—A bill for the sanitary regulation of barbering and providing for the better instruction of those engaged in the trade has been passed by the legislature. The law applies to first, second and third class cities only.

Child Labor.—A bill has been introduced into the legislature making it unlawful to employ any child under 14 at any labor during public school hours, and working hours for children are limited to 10 hours a day and 55 hours a week.

To Regulate Sale of Poisons and Spirits.—A bill has been introduced into the legislature which provides that it shall be unlawful to sell any medicines, drugs, chemicals, mixtures, anodynes, or any preparation or combination of the same which shall contain any opium or its alkaloids, coca or its alkaloids, or any whisky, brandy, wine or other intoxicating liquors, unless the same is so sold or furnished on the written prescription or order of a physician.

Appropriations for Hospitals.—Bills appropriating the following amounts for various hospitals have passed the house of the legislature: Jefferson Hospital, $260,000; University of Pennsylvania Hospital, $120,000; Medico-Chirurgical Hospital, $290,000, all of Philadelphia; Chester County Hospital, $14,000; Good Samaritan Hospital, Lebanon; Allentown

Hospital, Pittston Hospital, each $15,000, and Homeopathic State Hospital for the Insane, $4,000,000.

Hospital for Poor Consumptives.—The treasurer's report of the Free Hospital for Poor Consumptives shows that the receipts for the year ended February 28 were $70,757.74. The sum of $3,897.99 was collected in glass globes placed in stores and public offices. Within the year 561 patients were cared for, 481 at White Haven Sanitarium, and 80 in other institutions, by payment of their board. Of the patients at White Haven, 33 remained from the preceding year, 258 new cases were admitted, 86 left, 108 were discharged, and 5 died. There are now 100 patients at White Haven. Among the newly elected officers are Dr. Lawrence F. Flick, president, and Dr. Henry M. Fisher, one of the managers.

Philadelphia.

Expectoration Ordinance.—A city ordinance has been passed making it a misdemeanor to spit on the sidewalk, on floors of cars and other public places, the offense punishable by a fine of $1 and costs. Director English has instructed policemen to enforce the ordinance.

Good Water Filtration Secured.—The chief of the bureau of water filtration is much pleased with the city's new filtration system, claiming that the standard for the number of bacteria and for turbidity have both been lowered, and that the work here is better than the best results obtained in other cities. Provision has so far been made for filtration of only a part of the city's supply.

Held as Accessory to Murder.—George Horsey, a negro, a so-called "herb doctor," is held without bail on the charge of being accessory to the crime of murder. He is believed to have sold poison to Mrs. Catherine Danze for the murder of her husband. In the preliminary hearing it appeared probable that Horsey was not only accessory to this crime, but that he has for years furnished "slow poison" in many similar cases of murder. The case is being vigorously and thoroughly investigated.

Contagious Disease Report.—The health record shows that 458 new cases of grave contagious diseases were reported to the authorities for the week ended March 14. Of typhoid fever there were 272 cases, of smallpox 44, of scarlatina 101, and of diphtheria 41. The total number of deaths were 577, as compared with 528 for the same week last year. The records show that about 4,300 cases of such contagious diseases are now under treatment in Philadelphia. The number of new cases of smallpox since January 1 is over 300.

Physicians Endorse Medical Bill.—A mass meeting of many prominent physicians was held on the evening of March 7 in support of the Ray bill introduced into the legislature. The purpose of the bill is to raise the standard of education preliminary to a medical course. The following was adopted as the sense of the meeting:

Resolved, By this mass meeting of the physicians of Philadelphia, believing that the welfare of our citizens will be thereby advanced, that we hereby endorse the original bill of Mr. Ray, and ask for its enactment into a law by our authorities.

GENERAL.

The **Ecuador Quarantine** against San Francisco has been removed, beginning with vessels leaving that port March 12.

Reception to Dr. Osler.—The Medical Club of Philadelphia will give a reception to Dr. William Osler of Baltimore at the Hotel Bellevue, March 27.

Suspected Cholera Ship at New York.—The Anchor line steamer *Karamania* arrived March 10 at New York from Marseilles, Palermo and Naples. Seven of the steerage passengers and crew had died of an unknown disease. Sixteen had been sick. The symptoms were uniform, and resembled those of Asiatic cholera. No decision could be reached, the bodies having been buried at sea and there not being sufficient data to warrant a definite statement. The ship was fumigated and unloaded and the passengers detained in quarantine for ten days. No other case has developed. It is suggested that the deaths were from ptomain poisoning or from noxious gases from the hold. The matter has excited much discussion.

Mexico and Texas Plague Quarantine.—A quarantine has been declared by Mexico against San Francisco, applying to all Mexican ports, on the ground that the plague at Mazatlan came from San Francisco, and that it had also existed in the latter city as late as January. It will be remembered that this latter allegation is contrary to the advices from competent officials concerning San Francisco. Cuba has placed a quarantine against certain Mexican ports, because of fear of the plague. The State of Texas has quarantined Torreon, Mexico, alleging the existence of plague there. This action has aroused a vigorous protest from Torreon and from the Mexican capital. It is stated that no plague exists in Torreon, but that several Chinamen came there from San Francisco and, as ten days had not elapsed since they left the latter city, they were isolated for observation, and all measures taken in accordance with the sanitary code. El Paso, Texas, has instigated a quarantine against Durango, Mexico. The United States government ordered an investigation of the rumors concerning Torreon and Durango and Texas, by one of its state health officers, ordered a precautionary ten days' quarantine until the cases could be investigated. The physicians at Torreon have declared that no plague exists there and have requested that the quarantine be raised. The authorities of Texas state that this will be done as soon as they are sure that there is no reason for its continuance. The report that plague exists at Villa Union, Mexico, is confirmed. This point is on the route to the interior and has been vigorously quarantined. The infection was doubtless brought from Mazatlan by some of those escaping from that city and, therefore, eluded the quarantine guard. The situation in Mazatlan continues to improve slowly. Over a hundred people are isolated and thirty or forty are in the lazaretto, most of whom are recovering. United States Consul Kaiser at Mazatlan is conducting his affairs in the suburbs of that city, the consulate headquarters being in quarantine. He describes the situation there as follows:

> While the plague is still with us, yet it is the general opinion that the worst has passed, and that the plague will soon be a thing of the past. We have had one or two new cases daily, but not any new cases for the last three days. The authorities are doing everything in their power to stamp the fever out, and have burned about 500 houses, with all their contents.

The United States Public Health and Marine-Hospital Service reports that the total number of cases from the beginning of the outbreak to March 6 was 302 and the deaths 250.

FOREIGN.

Monument to Dr. Holub.—The Vienna scientific societies are collecting subscriptions for a monument to the physician and African explorer, Dr. Holub, who died Feb. 21, 1902.

The Medical Study Tour in Germany.—The tour this year will commence September 8 at Wiesbaden, and the party will disband at Cassel, September 20. The watering-places to be visited are those in the Rhine and Taunus provinces.

Berlin Medical School Inspectors.—The "Socialist Democratic" party at Berlin demands a separate medical inspector for each of the 260 public schools. The city council has not the funds for such a number, and has decided that 36 are sufficient for the present, with a salary of $500.

Gold Medal for Pawlow.—The University of Halle has conferred a gold medal on Prof. J. P. Pawlow of St. Petersburg for his research on digestion. His name is pronounced as if spelt Pavloff, which is also the pronunciation of the German form, Pawlow, by which he is best known to science.

Circulars for Prophylaxis Against Typhoid and Dysentery.—The German Council of Health has issued two more pamphlets like those it has distributed, which treat of tuberculosis. Koch, Kirchner and Krieger wrote the text. They describe the disease, its cause, treatment, modes of contagion, disinfection, etc.

A traveling post-graduate medical school, to visit all the cities of sufficient size and have clinics and lectures by eminent men is proposed in Germany. The practitioners in the surrounding territory would thus gather for a week or two once a year in their nearest large town. Museums, etc., would be carried.

Prizes for Milk Hygiene.—The Hamburg Exposition of Milk Hygiene offers thirty-one prizes for the best method of cleaning bottles, for the best contribution on the subject of modifying milk for infants, of keeping milk, sterilizing, etc. Also for popularly worded pamphlets on these subjects. The prizes range from $125 downward.

Compulsory Notification of Diseases in France.—By a decree, signed February 10, the president of the French Republic officially proclaimed the list of diseases for which notification is compulsory, adopting without change the list recommended by the Académie de Médecine. It was given in THE JOURNAL of February 28, p. 612.

Sale of a Medical Practice.—In a recent suit in France and another in Germany, the courts decided that the plaintiff suing for payment for the sale of a medical practice had no

case, as a medical practice can not be bought and sold. In one of the suits the sale of the furnishings and practice had been made by the widow of a physician.

French Congress of Alienists and Neurologists.—The thirteenth annual congress of French alienists and neurologists will be held at Brussels, Aug. 1 to 8, 1903. The subjects announced for discussion are "Catatonia and Stupor," "Histology of General Paralysis," and "Treatment of Agitation and Insomnia in Mental and Nervous Disease."

The Esmarch Medal.—A gold medal was presented to von Esmarch on the occasion of his recent birthday. It is now proposed to give a bronze replica of the medal to persons or societies that have distinguished themselves in the first aid or, Samaritan movement, as it is called in Germany. The first medal to be thus bestowed was presented to Prince Henry of Prussia, February 14.

The Social Medical Congress in Austria.—Dissatisfied with the efforts of the existing national medical organizations on behalf of their material interests, the physicians of Austria are organizing a national "*Sozial-ärztlichen* Congress," to discuss in general conclave the important questions of the day. The *Klin. Therap. Wochenschrift* quotes figures to the effect that 130 local medical associations are sending delegates.

Campaign Against Charlatans in Germany.—The last week brings the account of the condemnation of a faker at Plauen to a fine of $25 for assuming a pseudo-medical title. At Hochlausen a faith-healer was condemned to ten days' imprisonment, and at Carlsruhe the director of a so-called hydropathic institute was fined $75 for having treated a cancer subject with cold water alone. The authorities are discussing more stringent regulations against charlatans.

Charlatan Examinations.—A public examination of students trained in two Berlin "nature-healing" establishments was recently held there, the proceedings modeled on those of medical colleges. The report in the "*Nature-Healers' Gazette*" stated, among other items, that the students "passed a successful examination in the gynecologic examination of twelve male and twelve female patients, the latter suffering from gynecologic affections."

The Bulletin de l'Association Gen. des Medecins de France.—The newly created organ of the French Medical Association starts out with the intention, we are told, to fill in France the place occupied by the *British Med. Journal* in England and THE JOURNAL in this country. The French medical press is inclined to look askance at the newcomer, and the *Gazette Medicale de Paris* remarks that there is little chance of its realizing its ambition "unless it gets an American or English brain to take charge of it."

Correspondence.

The Biographic Clinics of Dr. Gould.

CHICAGO, March 14, 1903.

To the Editor:—The medical profession is under many obligations to Dr. George M. Gould, the vigorous editor of *American Medicine*. The last product of his fertile brain and productive pen is the "Biographic Clinics," a book of 233 pages. In writing this wonderful book he has done pioneer work in a most important department of medicine. He has shown conclusively that five of the greatest men in history were the subjects of eyestrain, which was responsible for all the agonies that made the busiest and most useful epochs in their lives a constant misery. The analysis of the symptoms related by themselves or their biographers is so logical that no doubt can be left in the minds of the careful reader concerning the correctness of the author's conclusions. There can be no doubt that thousands are affected in a similar manner to-day, and as any competent oculist can secure the necessary relief this class of patients should be reached by the profession. This little book should be in the hands of every physician and teacher, as it treats of a subject of a medical affection which, when overlooked or neglected, will bring ailments that will make life a constant misery, if not a total failure. N. SENN.

The Identity of Nerve Force and Electricity.

WASHINGTON, D.C., March 9, 1903.

To the Editor:—Referring to the paper of Dr. J. Emmet O'Brien, page 630 et seq. of THE JOURNAL, March 7, in which he claims priority as to the identity of electricity and nerve force, etc., I very respectfully suggest that on reference to the Transactions of the Medical Society of the District of Columbia, of Dec. 5, 1883, it will be found that the general principles of his paper have been long since anticipated by one on "Electricity and Nerve Force" presented by,

Very respectfully yours, JOSEPH T. HOWARD, M.D.

Maternal Impressions.

AIKIN, MICH., March 14, 1903.

To the Editor:—Baby S., a healthy seven-pound female baby, was born at full term on March 1, 1903. She has a prominent birthmark covering the left thumb and upper part of the arm, over the shoulder and slightly down the back. The mother had an accident three months before delivery. She was wearing an outing-flannel gown, the left sleeve of which was lighted from a match, and in a flash an area of the sleeve corresponding to the baby's birthmark was burned.

A. G. BELSHEIM, M.D.

Family Care of the Insane.

LEXINGTON, KY., March 16, 1903.

To the Editor:—Your editorial in the last number of THE JOURNAL, on family care of the harmless insane, leads me to suppose that you do not know that it has been continuously in use in Massachusetts since 1885. It was due, I believe, to the efforts of Dr. Henry R. Stedman of Boston, who wrote a most exhaustive paper on the subject. The matter was reviewed at the last meeting of the American Medico-Psychological Association. GEO. P. SPRAGUE.

Book Notices.

THE MALARIAL FEVERS OF BRITISH MALAYA. Studies from Institute for Medical Research, Federated Malay States. By Hamilton Wright, M.D. (McGill), Director of the Institute for Medical Research, Federated Malay States. Paper. Price 3 shillings net. Philadelphia: P. Blakiston's Son & Co. 1902.

This report, as stated by the author, does not represent an extensive study of malarial fevers of the British portion of the Malay peninsula, but he offers it as a first step, hoping it will call attention to the value of the field to European students of malaria. So far as the existing forms of malaria are concerned, they seem to be largely those met elsewhere. There is a predominance of the malignant tertian type, the mild tertian being only second in frequency. It appears that Europeans seldom contract malaria within their own quarters within the larger centers of population. They can nearly always date their infection to some out-station or jungle work in a specially malarial region. It is noticed as a remarkable fact that in a large prison where one species of anopheles abounds, malaria is almost unknown. The greatest sufferers seem to be the coolies and natives; among them are found the chief figures of morbidity and mortality. The tin mines of the Malay peninsula are ideal fever spots. The natives who live in large centers and neglect the hygienic measures followed by Europeans also suffer to a certain extent, and the native police are to a large extent agents of the transmission of the disorder from one section to another. A policeman breaks down in health in one place and is sent to another locality, which he also infects. This is a point to which Dr. Wright very properly calls the attention of authorities, as it is avoidable. The species of mosquitoes have been studied and the work contains valuable data in regard to prophylaxis and treatment, which he says is needed in these parts of British India. The first essentials are sanitary precautions, hydraulic drainage, clean surroundings and a well-regulated passion for quinin. The larger part of the work is a narration of cases and it concludes with accounts of the aspects of malaria in the different sections, contributed by government surgeons. In the very conclusion of the work an interesting statement is made by one of these that so far as known no case of blackwater fever has ever occurred in the Malay peninsula, notwithstanding the large doses of quinin that are habitually employed. This would seem

to contradict the quinin theory of the production of this disorder.

LEHRBUCH DER OHRENHEILKUNDE. Für Aerzte und Studirende, von Prof. Dr. L. Jacobson und Dr. L. Blau, Ohrenaerzten in Berlin. Dritte, neu bearbeitete Auflage des Jacobson-schen Lehrbuches, mit 345 Abbildungen auf 19 Tafeln. Leipzig: Verlag von Georg Thieme. 1902.

Professor Jacobson, whose work for sixteen years at the Ear Clinic of the University of Berlin gave him a wide acquaintance, and whose contributions to Schwartze's "*Archiv*" gave him a name in the otologic world, addresses a larger medical audience in this volume of more than 500 pages. It is intended for both students and general practitioners, and the details of more interest to the specialist are in smaller type. There are 345 illustrations, of which there are a number of new ones in this, third, edition (showing the radical operation, the recent plastic methods following the former, the method of exposing the middle cranial fossa and the transverse sinus, ligation of the jugular vein, and lumbar puncture).

The report of the complete literature is brought up to the end of the year 1901. Dr. Blau's command of this part of the work is apparent. It is to be expected, because of his being chief editor of the *Encyclopædie der Ohrenheilkunde*. The rapid progress of the specialty, the authors state, caused them to make additions to every department. The greatest changes are to be found in the chapters on normal hearing; the methods of examination; the differential diagnosis between diseases of the sound conducting and perceiving apparatus; on pneumatic massage of the middle ear; on chronic middle ear suppuration; on the "dry chronic middle ear catarrh"; on trephining the mastoid process, and on the radical operation; on deaf-mutism; on otitic diseases of the brain, meninges and sinuses; on otitic pyemia and septicemia; on aural complications in scarlet fever, diphtheria, locomotor ataxia, and tuberculosis. Therapeutics is freely discussed. The chapter on the value of the various methods of testing the hearing and of making exact differential diagnoses between diseases of the sound perceiving and conducting apparatus is written by Professor Jacobson alone. His exceedingly critical review of this important subject is of the greatest interest.

THE MIND OF MAN. A Text-Book of Psychology. By Gustav Spiller. Cloth. Pp. 552. Price, $2.75 net. London: Swan Sonnenschein & Co., Ltd. New York: The Macmillan Co. 1902.

The study of psychology is a profitable side-issue for the physician to take up for many reasons. The present volume is a contribution that most medical readers will find intelligible and interesting. Its treatment of the subject is that of the sensational school and there are probably many of us who will disagree with the author in some of his views and conclusions. The rejection of the noumenal ego will be to some of us a little hard to accept and his argument for it from the facts of insanity appear fallacious, but it seems to be the outcome of the line of reasoning of a large number of psychologic thinkers. Some subjects are very rapidly touched on and the treatment seems to us unsatisfactory, for instance, his few remarks on the subject of character. The characteristic of the author is self-confidence, which is very noticeable throughout in his assertiveness and his comments on other authors. He, however, ably handles his subject and some portions of the work are very interesting reading. His study of Shakespeare, for example, will be to some a novel treatment of the subject. The style of the book is interesting and it is throughout intelligible. It is certainly not the heavy reading which some works on psychology are found to be.

DISINFECTION AND DISINFECTANTS. A Practical Guide for Sanitarians, Health and Quarantine Officers. By M. J. Rosenau, M.D., Director of the Hygienic Laboratory and Passed Assistant-Surgeon U. S. Public Health and Marine-Hospital Service, Washington, D. C. Illustrated. Cloth. Pp. 353. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1902.

Dr. Rosenau has furnished a convenient manual of disinfection which can not fail to be of use to physicians, health officers and others, in fact, to everyone who has occasionally the need of such a work. He says he has made mistakes like everyone else in learning what, how and when to disinfect, and the book is written to aid others who have to battle with infection and communicable diseases. It is based on experience as well as knowledge gained otherwise and has, therefore, its special value as a work of a practical expert. It is a book the substance of which ought to be familiar to every physician and especially to every local health officer in the country.

PRACTICAL OBSTETRICS. A Text-Book for Practitioners and Students. By Edward Reynolds, M.D., Visiting Surgeon to the Free Hospital for Women, and Franklin S. Newell, M.D., Assistant in Obstetrics and Gynecology in Harvard University. Illustrated with 252 Engravings and 8 Colored Plates. Cloth. Pp. 553. Price, $3.75 net. Philadelphia and New York: Lea Brothers & Co. 1902.

This volume is the result of the practical success of an earlier work by one of the authors, which did not attempt to go so extensively into the subject as does the present. It is a convenient, reasonably condensed, and a practical handbook on the subject. It is thoroughly illustrated and has an excellent index. While not so full and complete as many other works on the subject, we believe, to a large class, it will be found even more popular because of its conciseness. The authors say, if it appears to settle most points of practice dogmatically, the fault has been intentionally committed on the belief that the description of one justifiable plan of treatment is more likely to be of advantage to the student than the extended discussion of the advantages and disadvantages of many methods. This explains the standpoint from which the book has been written. It is practical, and elegantly gotten up.

A HANDBOOK OF MATERIA MEDICA, PHARMACY AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By Samuel O. L. Potter, A.M., M.D., M.R.C.P. Lond., Formerly Professor of the Principles and Practice of Medicine in the Cooper Medical College of San Francisco. Ninth Edition, Revised and Enlarged. Cloth. Pp. 951. Price, $5.00. Philadelphia: P. Blakiston's Son & Co. 1902.

The author has added many things to what appeared in previous editions, some from his experience in the tropics while serving with the Eighth Army Corps and at general headquarters in the Philippines. In this respect it has an advantage over some other works that have recently appeared. A number of articles in the work have been rewritten and others expanded by incorporation of new items. The work, as a whole, has been, as the author says, critically revised.

Marriages.

THOMAS J. REID, M.D., to Miss Caroline Wolcott, both of Chicago.

PHILIP NEWMARK, M.D., to Miss Marie C. Fleck, both of Los Angeles, Cal., March 15.

EDWARD LEE BEATIE, M.D., Kansas City, Mo., to Miss Emma Gertrude Rockwell of Chicago, March 10.

SAMUEL A. HUFFMAN, M.D., Chesterfield, Ill., to Miss Clyde McQuerry of Greenfield, Ill., February 26.

ROBERT J. HEAVENRIDGE, M.D., to Miss Cora McClenning, both of Hannibal, Mo., at New London, Mo., March 2.

JOHN R. MCDILL, M.D., Manila, P. I., formerly of Milwaukee, Wis., to Miss Anna Josephine Neale of San Diego, Cal., at Manila, January 27.

Deaths.

William Phipps Munn, M.D. University of Michigan, Ann Arbor, 1886, died at his home in Denver, March 12, from hemorrhage of the lungs, aged 38. He was born in Pittsburg, and after his graduation in medicine practiced for four years in Allegheny. He was then compelled on account of ill-health to go to Colorado, and settled in Denver. He entered immediately into college work and was given the chair of histology and pathology in Gross Medical College. In 1892 he was made professor of genito-urinary diseases and clinical surgery in the University of Denver, and occupied this chair until 1897. He was a member of the American Medical Association; president of the Colorado State Medical Society in 1900-1901; member and some-time president of the Denver and Arapahoe Medical Society; health commissioner of Denver 1895 to 1899; for ten years a member of the board of health, and recently its president. He was always active in all that pertained to the good of the medical profession and was one of the leaders in the work of reorganization in Colorado.

Arthur Vallee, M.D. Laval University, Quebec, 1875, who filled in turn the chairs of toxicology and legal medicine, obstetrics, deontology, history of medicine and mental diseases; a member of the Psychologic Society of Paris, and the Society of Mental Medicine of Belgium; vice-president of the Provincial Medical Council and for a long time superintendent of the Beauport Insane Asylum, Quebec, died at his home, January 23, after an illness of four months, aged 54.

Charles Henry Ohr, M.D. University of Maryland, Baltimore, 1834, mayor of Cumberland, Md., for seven years; acting assistant surgeon U. S. Army during the Civil War; member of state senate; vice-president and president of the Medical and Chirurgical Faculty of Maryland, died at his home in Cumberland, March 3, aged 92. He retired from practice several years ago.

George W. Bishop, M.D. Jefferson Medical College, Philadelphia, 1848, a practitioner of medicine until 1865, afterward state senator from Worcester County, Md., assistant treasurer of the United States at Baltimore, and later treasurer of Worcester County, died suddenly from heart disease at his home in Snow Hill, Md., March 6, aged 76.

Joseph Christopher Shepard, M.D. New York University, 1860, who afterward studied in France and then served throughout the Civil War on the Confederate side, one of the most prominent physicians of Wilmington, N. C., died at his home in that city, March 5, from heart disease, after an illness of ten days, aged 63.

Henry R. Porter, M.D. University of Georgetown, Washington, D. C., 1872, of Bismarck, N. D., died at Agra, India, March 3, from heart disease, while making a trip around the world, aged 55. He was an acting assistant surgeon in the Army, and served with Reno in the campaign in which Custer was killed.

John R. Casey, M.D. St. Louis Medical College, 1857, for nearly half a century a practitioner of Joliet, Ill., for ten years surgeon to the state penitentiary, a member and once president of the Will County Medical Society, died at his home in Joliet, March 1, from diabetes, after a long illness, aged 68.

James J. Larkin, M.D. Chicago Medical College, 1880, died suddenly at his home in South Chicago, from apoplexy, March 12, aged 49. He was a member of the Chicago Medical Society and Physicians' Club, and was surgeon to the South Chicago Hospital.

William Campbell Goodlett, M.D. University of Pennsylvania, Philadelphia, 1849, formerly a surgeon in the United States Army and in the Confederate service, died at his home in St. Louis, March 1, after an illness of one year, aged 80.

Ashley A. Webber, M.D. New York University, 1888, an authority on gunshot wounds and an expert of national repute with the rifle and revolver, died from Bright's disease at his home in Brooklyn, February 19, aged 39.

Enoch P. Jones, M.D. Eclectic Medical Institute, Cincinnati, 1854, died at his home in Marion, Ind., from paralysis, after an illness of two months, February 26, aged 75. He retired from practice in 1900.

Levi B. Ward, M.D. Kentucky School of Medicine, Louisville, 1896, member of the Colorado State and Fremont County medical societies, died at his home in Canon City, Colo., February 24, aged 37.

James Henry Dugan, M.D. College of Physicians and Surgeons, Chicago, 1899, of La Salle, Ill., died March 2, after an operation for appendicitis, at Mercy Hospital, Chicago, aged 30.

David F. Rupp, M.D. Kansas City Medical College, 1879, health officer of San Diego, Cal., died at his home in that city, February 25, from pneumonia, after an illness of ten days, aged 53.

James C. Patton, M.D. Medical College of Evansville, Ind., 1850, a veteran of the Civil War, died at his home in Francisco, Ind., where he had practiced for 53 years, February 19, aged 76.

Charles F. Patterson, M.D. Jefferson Medical College, Philadelphia, 1878, died at his home near Coal Grove, Ohio, February 10, from consumption, after an illness of many months.

George W. Smith, M.D. Rush Medical College, Chicago, 1894, of Monongah, W. Va., died at the Cook Hospital, Fairmont, W. Va., February 26, after an extended illness, aged 28.

Alexander Stanley Hancock, M.D., died at his home in New York City, February 28, from starvation due to a cancer of the throat, aged 65. He retired from active practice in 1893.

Charles F. Rideout, M.D. Medical School of Maine, Bowdoin College, Brunswick, 1884, died at his home in Bath, Maine, February 28, from pneumonia, after a brief illness, aged 45.

Henry Edward Newell, M.D. Long Island College Hospital, Brooklyn, 1873, died at his home in West Derry, N. H., February 24, after a long and painful illness, aged 51.

Edwin E. McCall, M.D. Baltimore Medical College, 1894, health officer of Lima, Ohio, died at his home in that place from uremia, after a short illness, March 23, aged 37.

John N. Kendig, M.D. University of Maryland, Baltimore, 1898, of Akron, Ohio, died at a hospital in Cincinnati, Ohio, February 26, from cerebrospinal meningitis, aged 28.

Theodore A. Grover, M.D. Starling Medical College, Columbus, 1869, formerly of Pittsburg, Pa., died suddenly at Wilmington, Del., March 6, from paralysis, aged 63.

John Graham, M.D. Eclectic Medical Institute, Cincinnati, 1878, died at his home in Plainville, Ill., February 23, from kidney disease of long standing, aged 65.

Francis Rourk, M.D. University of Maryland, Baltimore, 1865, died suddenly at his home in Detroit, Mich., February 22, aged 61. He was a veteran of the Civil War.

A. D. Griffin, M.D., who practiced medicine in Keokuk and Benton counties, Iowa, for more than half a century, died at his home in Vinton, Iowa, February 25.

J. R. Simms, M.D. Medical School of the Valley of Virginia, Winchester, 1849, died suddenly, February 27, at his home in Linden, Cal., aged 82.

William H. Baird, M.D. Tulane University, New Orleans, 1869, of Oxford, Miss., died at Jackson, Tenn., March 5, after an invalidism of four months.

Alexander C. Peters, M.D., for more than forty years a practitioner of Newark, N. J., died from paralysis at his home in that city, March 1, aged 63.

T. W. Wright, M.D. Keokuk (Iowa) Medical College, died at his home in Farmington, Iowa, from typhoid fever, March 1, after an illness of two weeks.

Daniel C. Dickinson, M.D. Medical College of Virginia, Richmond, 1878, died at his home in Union Hall, Va., March 6, after a brief illness, aged 45.

Henry W. Richter, M.D. New York University, 1861, died at his home in Brooklyn, N. Y., March 4, from paralysis, after a year's illness, aged 63.

William F. G. Noetling, M.D. University of Heidelberg, Germany, 1842, died at his home in East Hampton, Conn., February 28, aged 83.

Richard D. Greene, M.D. Bellevue Hospital Medical College, New York, 1867, died at his home in Lexington, Ky., February 25, aged 63.

Lester Joslin, M.D. Cleveland Medical College, 1867, died at his home in Ionia, Mich., February 26, from a carbuncle, after a short illness.

William J. Enders. M.D. Miami Medical College, Cincinnati, died at his home in Hamilton, Ohio, March 7, from pneumonia, aged 26.

Rutherford R. Price, M.D. Western Pennsylvania Medical College, Pittsburg, 1900, of Toronto, Ohio, died at Phoenix, Ariz., February 26.

Elliott W. Leech, M.D. Kentucky School of Medicine, Louisville, 1891, died at his home in Shelbyville, Ind., March 5, aged 70.

L. W. Bishop, M.D. Medical College of Ohio, Cincinnati, 1870, died at his home in Batavia, Ohio, February 27, from paralysis.

John N. Davis, M.D. Eclectic Medical Institute, Cincinnati, 1880, of Boulder, Colo., died at the Denver Hospital, February 22.

Samuel C. Hanford, M.D. New York University, 1845, died at his home in Hempstead, Long Island, N. Y., February 24, aged 80.

William Johnson, M.D. Rush Medical College, Chicago, 1880, of Grant City, Mo., died at Boulder, Colo., February 17.

Reginald H. Reid, M.D. Detroit College of Medicine, formerly of Detroit, died at Hils, Hawaii, recently, aged 28.

Edward R. Kittoe, M.D. Chicago Medical College, 1869, died suddenly at his home in Galena, February 18, aged 57.

William H. Koogler, M.D. University of Iowa, Iowa City, 1873, died at his home in What Cheer, Iowa, February 13.

James **M. Glass, M.D.** Fort Worth (Texas) University, 1901, of Poolville, Texas, died recently at Fort Worth.

Deaths Abroad.

Dr. **Michaux,** surgeon of the Messageries Maritimes steamer *Laos,* died at sea from the effects of atropin administered by accident, January 24.

Rafael Zaldivar, M.D. National University, Guatemala, statesman, and twice president of Salvador, and more recently minister of that republic in Washington, died in Paris, March 3.

F. Cramer, M.D., Würzburg, the well-known German surgeon, died from influenza-pneumonia at his home in Wiesbaden, in February, aged 56.——**A. J. A. Guimaraes, M.D.,** Bahia, assistant superintendent of the Federal Laboratory of Bacteriology, died at Rio Janeiro, February 12, aged 32.——**D. Cervesato, M.D.,** Padua, private docent and professor of pediatrics at Padua and later at Bologna, died at his home from appendicitis, January 24, aged 51. He is the author of numerous works on his specialty and other subjects.

Dr. **M. Weiss** died at Vienna, aged 74. He resided in Prague or its vicinity until 1897, and was prominent in all matters affecting the general welfare of the profession. He was also a frequent contributor to medical literature, and honorary member of several medical societies.——**Dr. Emil Gold,** director of the Model Hospital at Bielitz, which owes its preeminence to his efforts, died recently, aged 44, from the effects of a stroke of paralysis last year, due to overwork.——**C. Gallozzi, M.D.,** professor of surgery and dean of the medical department of the University of Naples, died there February 11, aged 84, from cerebral embolism.——**F. Loesch, M.D.,** professor of internal medicine at Kiev, aged 63, died from apoplexy. He has published numerous works in Russian and foreign medical literature.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE HORSELESS CARRIAGE.

SPOKANE, WASH., Feb. 24, 1903.

In THE JOURNAL of February 14 a communication is published from Dr. Oscar S. Gilbert, Boulder, Colo., requesting information on the use of the automobile by the physician, and I here give my experience.

Fifteen months ago I purchased a light runabout of a standard make, weighing about 850 pounds, having, as claimed by the maker, a 4½ horse-power gasoline engine, costing laid down here $750. I used this wagon eleven months (less one month during which it was laid up for repairs), running it during that period about 6,000 miles, most of it on gravelly roads, which were comparatively level, and muddy only two months.

Repairs alone during that period cost something over $25 a month, gasoline for the same period about $6 a month. After the first few months I had sufficiently mastered the art of navigation of a gasoline engine to enable me to feel reasonably sure that so far as my engine was concerned I would be able to return home from almost any trip I took.

While this horse-power is not sufficient to take a wagon of this weight up a grade to exceed 15 per cent. with any degree of rapidity, by careful usage and stopping occasionally to speed up the motor, a much heavier grade may be made.

Before the eleven months were out I had spent at least another $100 in replacing worn-out parts, such as chains, front and rear sprockets, tires, etc. With these parts, I expect to have another two summers' use simply as a pleasure rig for my wife, by avoiding hard and muddy trips.

Three months ago I purchased a phaeton of a standard make, weighing about 1,100 pounds, with three cylinders, and guaranteed ten horse-power, large, wooden wheels, top, and all the conveniences of an up-to-date doctor's rig, costing here $1,400. This wagon has been run through the severe muddy winter weather, but I have had considerable annoyance from break-downs of small parts, none serious enough to lay me up for more than a few hours, but serious enough to have left me stranded high and dry had I been making country trips instead of city runs, where, by the use of the telephone, the repair man can always be gotten quickly.

I had hoped when I purchased this wagon to be spared such small annoyances, but for some reason unknown to me the manufacturers have not yet sufficiently perfected their wagons to accomplish this, as has been proven to me both by my own experiences and those obtained from reading the physician's number of a late automobile journal.

There appear to be so many little break-down possibilities, that even now I would not feel safe to leave the city limits very far with either of my wagons. Pneumatic tires, even the best, are liable at any time to be punctured or perforated by pressure or nails, and it is no small matter to repair them outside of a well-regulated shop. The sun and planet transmission gear, the one generally in use, is a very complicated affair and often a source of trouble from breakage.

The lubrication requires constant care and is liable at any time to become a source of annoyance. The usual chain transmission is a delicate affair, and likely to break or stretch. The rear sprocket wheel, being a differential gear, may at any time cause trouble by breaking of pins or small parts. The matter of circulation of water in the small rig for cooling the engine is most important, the process being by centrifugal pump, which, with its connections, may at any time get out of repair, and where there is no water circulating, the packing in the cylinder head soon burns out, and it is laid up for a few hours, even if you are willing to stop on the road and pack your own engine. The sparking arrangement in either rig is at any time liable to give trouble.

I could go on for a half hour describing troubles that may be had by the automobilist, but think I have given a sufficient number to prove the necessity of keeping the wagon within a reasonable distance of a skilled mechanic and gasoline engineer, whose almost constant attention is required to get good service out of it.

There is no doubt that much time can be saved on the road and many more calls made with an automobile than with any form of horse and wagon, but to accomplish these results considerable experience, expense, and annoyance must be had. I have no doubt that there will be made in the near future a wagon free from many of the annoyances and dangers which I have outlined, but until then, my advice to physicians who expect to run their wagons at all times on all kinds of roads and places, would be not to buy an automobile.

Yet, to a man able and willing to pay for the extra expense mentioned above, I believe it will bring him more pleasure and exhilarating exercise than the same amount of money invested in any other way, but in buying one for use off of the paved road, get a gasoline rig in which there is at least a horse-power for each one hundred pounds weight of the wagon, and the entire weight of the wagon should not much exceed one thousand pounds. Get one with double detachable tires, with wooden wheels, and a two or three-cylinder gasoline engine, with a cylinder head which screws in, and does not require packing, avoid centrifugal pumps and vibrators also if possible, and expect to use it at least three months before a sufficient knowledge of the wagon has been gained to get much pleasure out of it. The electric and steam wagons are still more expensive and difficult to operate, the latter requiring too much time for starting and water and gasoline for running.

C. P. THOMAS.

State Boards of Registration.

The Modified Montana Medical Law.

Two bills bearing on the medical practice law of Montana have passed through the legislature of that state; one making provision for appeals, providing that all appeals against the decisions of the board of medical examiners shall be tried before a jury of six physicians, not less than two of whom shall be of the same school of medicine as the appellant. This act takes out of the hands of the lay judges and juries the decision of questions as to professional conduct, standing, etc., of those who have come under the penalties provided for by the law.

The other amendment provides for reciprocity. It changes the section of the law that lays down the conditions under which licenses can be granted by inserting after the provision for granting of said license the following:

Provided, however, that in all cases where an applicant for a certificate under this Section shall produce and exhibit to said board of examiners a certificate from a board of medical examiners, duly appointed and existing under the laws of any state of the United States and recognizing certificates or licenses from this state, certifying to the fact that the person presenting such certificate is duly and well qualified to practice medicine and surgery in the state issuing said certificate, and that said board issuing said certificate has subjected the applicant to a thorough examination to ascertain this fact, or certifying to the fact that the person presenting such certificate is duly and well qualified to practice medicine and surgery in the state issuing said certificate; and to the further fact, if such is the case, that said applicant was exempt from examination under the provisions of the law of said state, by reason of his residence in said state in the active practice of medicine and surgery at the time of the passage in said state of said law requiring the examination of applicants to practice medicine and surgery; he or she may, at the discretion of said board of examiners, on paying the fee required of applicants for examination under the provisions of Section 607 of this article, and otherwise complying with all the requirements of this article, receive from said board of examiners a certificate to practice medicine and surgery within this state, and on filing said certificate with the county clerk of the county in

which he resides, as is provided in Section 604 of this article, he shall be a legally qualified practitioner of medicine and surgery in this state.

Association News.

New Members.

New members for the month of February:

ALABAMA.

Gresham, W. A., Russellville.
Hargrove, R. J., Tuscaloosa.
Kernachan, W. J., Florence.
Lightfoot, P. M., Crosskeys.
Persons, H. S., Montgomery.
Robertson, J. W., Brundidge.
Oates, W. H., Yellow Pine.

ARKANSAS.

Barlow, E. E., Dermott.
Hipolite, W. W., DeVall's Bluff.
Hume, H. C., Paragould.
Pope, M. Y., Monticello.
Smith, R. N., Augusta.
Stanley, A. C., Tillar.
Murphey, N. E., Clarendon.
Hebert, G. A., Hot Springs.
Waldrop, J. G., Wheatley.

CALIFORNIA.

Goodfellow, G. E., San Francisco.
Brown, M. W., Alameda.
Key, J. W., Pinole.
Wilder, E. M., Sacrameto.

COLORADO.

Hoagland, H. W., Colorado Sprgs.
Sipe, W. P., Cripple Creek.

CONNECTICUT.

Covley, M. L., Waterbury.

DISTRICT OF COLUMBIA.

Baker, R. W., Washington.
Boyd, J. C., Washington.
Belt, E. O., Washington.
Mullins, J. B., Washington.
Muncey, E. B., Washington.
Thompson, E D., Washington.
Wagner, W. F., Washington.
Walsh, F. C., Washington.

FLORIDA.

Sutherland, Wm., High Springs.
Jenkins, E. E., Palatka.

ILLINOIS.

Behrendt, A. J., Chicago.
Decker, Adolph, Chicago.
Getz, Michael, Chicago.
Rawlings, I. D., Chicago.
Neff, J. M., Chicago.
Loewy, Arthur, Chicago.
Windell, U. G., Chicago.
Benson, Newton J., Vienna.
Rodefeld, H. H., Quincy.
Schreiter, J. B., Savanna.
McClanahan, V. A., Viola.
Weimer, E. A., Pekin.

INDIANA.

Schlicker, A. G., East Chicago.
Gemmill, H. C., Indianapolis.

INDIAN TERRITORY.

Berry, V., Wetumka.
Warterfield, F. E., Holdenville.

IOWA.

Doty, E. A., Oxford.
Harriman, J. W., Iowa City.
Kembel, C. L., Bloomfield.
Mullin, J. P., Iowa City.

KANSAS.

Brockett, E. M., Topeka.
Freeman, J. D., Topeka.
Jones, H. T., Lawrence.
Jones, G. W., Lawrence.
Williamson, H. E., Olathe.

KENTUCKY.

Foster, R. L., Cosky.
Hord, W. H., Orangeburg.
Harper, J. H., Ibex.
Kobert, C. B., Lebanon.
Ferguson, R. V., Hadensville.
McGary, J. R., St. Mary's.
Martin, J. G., Ashland.
Moss, M. McT., Franklin.
Brand, Leslie, Maysville.

LOUISIANA.

Boudreau, W. R., Washington.
Alexander, A. D., Mer Rouge.
Kearney, F. J., Plaquemine.
Paine, R. B., Mandeville.
Scales, J. L., Alden Bridge.
Miller, V. A., Lake Arthur.
Elliott, Jr., J. B., New Orleans.
Menage, H. E., New Orleans.
O'Kelley, J. P., New Orleans.

MARYLAND.

Allen, L. M., Baltimore.
Clewell, A. A., Baltimore.
Hadel, A. K., Baltimore.
Johnston, R. H., Baltimore.
Pearce, W. M., Baltimore.
Smith, R. P., Baltimore.
Mitchell, G. W., Baltimore.
Marshall, H. T., Baltimore.
Taylor, R. T., Baltimore.
Ohle, H. C., Baltimore.
Requardt, W. W., Baltimore.
Wolf, W. B., Baltimore.

MASSACHUSETTS.

Hammond, Philip, Boston.
Page, C. G., Boston.
Paul, L. G., Boston.
Redfearn, Jos., Hudson.
Swain, Howard T., Boston.
Wilson, H. E., Chester.

MICHIGAN.

Bursman, J., Altona.
Dusseau, S. V., Erie.
Eshleman, Lillian, Battle Creek.
Holdom, Isabella, Detroit.
Harris, Roland H., Battle Creek.
Leuschner, Richard, Mt. Clemens.
Scott, T. B., Owosso.
Morse, J. F., Battle Creek.
Tonkin, E. W., Edwardsburg.
Wilhelm, J. M., Traverse City.
Waldron, F. R., Ann Arbor.
Wilkinson, A. M., St. James.

MISSISSIPPI.

Butler, J. T., Brookhaven.
Catchings, C. E., Woodville.
Darrington, John, Yazoo City.
Eckford, J. W., Starkville.
Purser, Thos., McComb.
Scudder, W. H., Mayersville.
Saunders, J. S., Coffeeville.
Martin, Van Buren, Bogue Chitto.

MISSOURI.

Armstrong, G. L., St. Louis.
Burrill, C. W., Kansas City.
Burford, C. E., St. Louis.
Hopkins, T. A., St. Louis.
McVey, T. A., St. Louis.
Chamberlain, G. M. E., Rockport.

NEBRASKA.

Condon, A. P., Omaha.
Groti, Marie L., Ponca.
McKean, J. W., Omaha.
Upjohn, W. C., Omaha.

NEW JERSEY.

Eagleton, W. P., Newark.
Henry, Geo., Raritan.
Knowles, F. E., South Orange.

NEW YORK.

Boyd, A. S., New York City.
Culver, D. J., Harrisville.
Dennis, C. W., Goshen.
Fielder, F. S., New York City.
Lester, Elias, Seneca Falls.
Silverman, Maurice J., New York.
McKay, Jas., Potsdam.
Bacon, C. B., Waterloo.

NORTH CAROLINA.

Pate, W. T., Gibson.
Headen, W. E., Morehead City.
Stansill, J. M., Rockingham.

OHIO.

Casello, J. B., Cincinnati.
Moss, E. H., Cincinnati.
Warner, W. C., Cleveland.
Dempster, A. C., Uhrichsville.
Hughes, L. H., Dennison.
Wagner, P. M., Canal Dover.

OKLAHOMA.

Clutter, W. H., Oklahoma City.
Patchen, C. C., Chandler.

PENNSYLVANIA.

Alleman, K. M., Hanover.
Allison, T. B., Tarentum.
Bitler, B. E., Potts Grove.
Dolan, W. K., Scranton.
Snavely, H. B., Lancaster.
Rebuck, Chas. S., Harrisburg.
Sandblad, A. G., McKeesport.
Gardiner, F. G., Pittsburg.
Stuart, E. C., Pittsburg.
Christian, H. M., Philadelphia.
Shoemaker, W. T., Philadelphia.
Singer, B. L., Philadelphia.

SOUTH CAROLINA.

Campbell, J. W., Clover.

SOUTH DAKOTA.

Bobb, B. A., Mitchell.
Vaughn, Jas. B., Castlewood.

TEXAS.

Broadstreet, S. C., Mt. Pleasant.
Crouse, H. W., Victoria.
Collom, S. A., Kennard.
Dorbandt, J. D., Lampasas.
Dorris, T. B., Grape Vine.
Emery, F. D., Dallas.
Higginbotham, W. L., Howe.
Krueger, A. G., Caldwell.
Taylor, Holman, Marshall.
Vaughan, Z. E., Waskom.
Williams, T. A., Houston.
White, David, Honey Grove.

UTAH.

Hammond, E. D., Salt Lake City.

VERMONT.

Lyman, W. A., Burlington.

VIRGINIA.

Bindewald, O. C. A., Portsmouth.
Drewry, M. R., Cascade.

WASHINGTON.

Rust, H. H., Enumclaw.
Slater, H. H., Deer Park.
Scamell, J. W., Aberdeen.

WEST VIRGINIA.

Haught, F. T., Mona.

WISCONSIN.

Buchan, S. C., Racine.
Dearholt, H. E., Milwaukee.
Hopkinson, Lawrence, Milwaukee.
Smith, C. M., Evansville.
Scott, W. F., Port Washington.
McWain, H. A., Poy Sippi.
Myers, Albert W., Milwaukee.
Walbridge, F. E., Milwaukee.

WYOMING.

Hall, E. A., Rock Springs.

Medical Organization.

Hempstead County (Ark.) Medical Society.

This society was organized February 13 by Dr. J. S. Corn, Nashville, councilor of the Sixth District Arkansas Medical Society, and elected the following officers. Dr. Hosea J. F. Garrett, president; Dr. B. S. Rhea, vice-president, and Dr. J. H. Weaver, secretary and treasurer.

Box Butte County (Neb.) Medical Society.

In accordance with the suggestion of the American Medical Association and the Nebraska State Medical Society the physicians of the county met in Alliance, February 27, and organized this society, with Dr. Harvey H. Bellwood, Alliance, president; B. F. Bettleheim, vice-president, and Dr. J. E. Moore, Alliance, secretary and treasurer.

Coffee County (Tenn.) Medical Society.

Dr. James B. Murfree, Jr., Murfreesboro, met the physicians of Coffee County at Manchester and assisted them to reorganize the county society with the following officers: Dr. James B. Cowan, Tullahoma, president; Dr. A. F. Vincent, Manchester, vice-president; Dr. G. W. Taylor, Summitville, secretary and Dr. Erin P. Vaughan, Manchester, treasurer.

Lewis County (Ky.) Medical Society.

The physicians of Lewis County held a meeting at Vanceburg, March 11, and organized a county society, after a talk by Dr. Joseph E. Wells, Cynthiana, councilor for that district, adopting, without change, the plan of organization of the American Medical Association. Dr. Lewis A. Grimes, Concord, was elected president, and Dr. Aaron F. Hill, Vanceburg, secretary.

Greenup County (Ky.) Medical Society.

The physicians of Greenup County met at Greenup, March 12, and organized a county society, after an address from Dr. Joseph E. Wells, Cynthiana, district councilor. The plan of organization of the American Medical Association was adopted without change, and the following officers were elected: President, Dr. A. A. De Bard, and secretary, Dr. Romulus C. Biggs, both of Greenup.

Wayne County (N. Y.) Medical Association.

Physicians of the county met at Lyons, February 12, and organized a new county medical association to be in affiliation with the New York State Medical Association and the American Medical Association. The following officers were elected: Dr. James W. Putnam, Lyons, president; Dr. Mary A. Brownell, Newark, vice-president; Dr. George S. Allen, Clyde, secretary, and Dr. Darwin Colvin, Clyde, treasurer.

Bracken County (Ky.) Medical Society.

The physicians of Bracken County met at Brooksville, March 10, and after listening to an address by the councilor of the district Dr. Joseph E. Wells, Cynthiana, organized a county society, with Dr. David J. Wallin, Brooksville, president and Dr. Vannie E. Smith, Powersville, secretary. The

society adopted without change the constitution and by-laws prepared by the American Medical Association.

Caldwell County (Ky.) Medical Society.

The members of the medical profession of Caldwell County met at Princeton, March 12, and after a very interesting and instructive address by Dr. William W. Richmond, Clinton, president of the Kentucky State Medical Association, formed a county society, electing Dr. R. S. Coleman president and Dr. R. Woods Ogilvie secretary, both of Princeton. The constitution and by-laws of the American Medical Association were adopted without change.

Plaquemines Parish (La.) Medical Society.

The medical fraternity of Plaquemines Parish met at Pointé à la Hache on February 5, and organized a parish society, in affiliation with the Louisiana State Medical Association. Dr. John N. Thomas, Quarantine, was elected president; Dr. Valery O. Schayot, Pointé à la Hache, vice-president; Dr. J. F. Buquoi, Pointé à la Hache, secretary-treasurer. The society adopted the constitution and by-laws recommended by the American Medical Association for component societies.

Cincinnati Academy of Medicine.

The annual election, held March 2, resulted as follows: President, Dr. Byron Stanton; vice-presidents, Drs. John L. Cleveland and Burwell P. Goode; secretary, Dr. Stephen E. Cone; treasurer, Dr. Magnus A. Tate, and librarian, Dr. Arch I. Carson. At the previous meeting, held February 23, the academy so changed its constitution as to render it the County Medical Society of Hamilton County, to affiliate it with the state and national associations and to allow any non-sectarian practitioner of medicine to become a member.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 5-8.

Florida Medical Association, St. Augustine, April 8.
Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11.
Tennessee State Medical Society, Nashville, April 14-16.
Medical Association of Georgia, Columbus, April 15.
South Carolina Medical Association, Sumter, April 15-16.
Iowa State Medical Society, Sioux City, April 15-17.
Medical Association of the State of Alabama, Talladega, April 21.
Medical Society of the State of California, Santa Barbara, April 21.
Mississippi State Medical Association, Greenville, April 21-23.
Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
Kentucky State Medical Society, Louisville, April 22-24, 1903.
Texas State Medical Association, San Antonio, April 28.
Louisiana State Medical Society, New Orleans, April 28-30.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
Nebraska State Medical Society, Lincoln, April 28-30.
Illinois State Medical Society, Chicago, April 29-May 2.
Arkansas Medical Society, Jonesboro, April 30-May 2.

Placer County (Cal.) Medical Society.—At the annual meeting held at Auburn, February 14, Dr. Charles H. Bulson, Lincoln, was elected president, and Dr. Robert F. Rooney, Auburn, secretary.

Platte County (Neb.) Medical Society.—At its annual meeting in Columbus, February 26, Dr. David T. Martyn, Columbus, was elected president and Dr. Jerome C. McKinley, Humphrey, secretary.

Chattanooga (Tenn.) Medical Society.—At the annual meeting, Dr. William L. Nolen was elected president; Dr. Robert H. Tatum, vice-president; Dr. Joseph W. Johnson, secretary, and Dr. Samuel I. Yarnell, treasurer.

Worth County (Iowa) Medical Society.—At the annual meeting, February 10, at Northwood, Dr. Samuel R. Rice, Northwood, was elected president; Dr. Norman W. Phillips, Manly, vice-president, and Dr. J. Herbert Darey, Northwood, secretary.

Yakima County (Wash.) Medical Society.—On February 24 the society held its annual meeting in North Yakima and elected Dr. B. A. Owens Adair, North Yakima, president; Dr. W. H. Carver, secretary, and Dr. H. R. Wells, North Yakima, treasurer.

Memphis and Shelby County (Tenn.) Medical Society.—At the annual meeting and banquet held in Memphis, March 3, Dr. Bennett G. Henning was elected president; Dr. Edwin Williams, vice-president, and Dr. James L. Barton, secretary, all of Memphis.

Medico-Chirurgical College (Philadelphia) Alumni Association.—At the annual meeting, January 10, in Philadelphia, Dr. George W. Pfromm was elected president; Dr. Stillwell C. Burns, secretary and Dr. Emanuel S. Gans, treasurer, all of Philadelphia.

Tri-County (Neb.) Medical Society.—Physicians of Dixon, Dakota and Thurston counties met at Emerson, February 25, and organized a society, with Dr. James M. O'Connell, Ponca, president; Dr. Charles H. Maxwell, Dakota City, vice-president, and Dr. Robert Q. Rowse, Wakefield, secretary and treasurer.

Franklin County (Ohio) Medical Society.—This society met, February 24, in Columbus, and elected the following officers: President, Dr. Sherman Leech; vice-presidents, Drs. Theodore G. Davidson and James F. Reynolds; treasurer, Dr. John C. Bishop, and secretary, Dr. Charles W. McGavran, all of Columbus.

Western Slope (Colo.) Medical Society.—The physicians of Garfield, Eagle and Pitkin counties, Colorado, met recently at Glenwood and organized the society, with Dr. Leman G. Clark, Glenwood, president; Dr. Wilmer G. Lockard, Newcastle, vice-president; Dr. William W. Crook, Glenwood, treasurer, and Dr. Albert L. Robinson, Glenwood, secretary.

Canadian Medical Association.—The thirty-sixth annual meeting of the association will be held in London, Ont., August 25, 26, 27 and possibly 28, under the presidency of Dr. Walter H. Moorhouse of that city. Dr. Matthew D. Mann, Buffalo, has been asked to deliver the address in gynecology, and Dr. Alexander Hugh Ferguson, Chicago, the address in surgery.

East Jackson County (Mo.) Medical Society.—A local society, made up of the physicians of eastern Jackson County, not including Independence, has been organized at Oak Grove, with the following officers: Dr. Fountain L. Cook, Blue Springs, president; Dr. Elmer E. Perry, Oak Grove, vice-president, and Dr. Noah D. Ravenscraft, Buckner, secretary and treasurer.

Genesee County (N. Y.) Medical Association.—At a meeting of this association, February 27, the following officers were elected: President, Dr. Albert P. Jackson, Oakfield; vice-president, Dr. Henry E. Ganiard, Stafford; secretary and treasurer, Dr. C. Louise Westlake, Le Roy; Fellow to the state association, Dr. William D. Johnson, Batavia, and alternate, Dr. A. F. G. Zurhorst, Oakfield.

Hardin County (Ky.) Medical Society.—The corrected list of the officers elected at the last meeting should read: Dr. Charles Z. Aud, Cecilian, president; Dr. W. H. Shother, Big Spring, vice-president; Dr. James C. Mobley, Elizabethtown, secretary and treasurer; board of censors, Drs. James R. Gray, James W. O'Connor and Frank P. Strickler, Elizabethtown, and delegate to the state society, Dr. Charles Z. Aud.

Tri-State Medical Society of the Carolinas and Virginia.—The fifth annual session of this society was held in Columbia, S. C., February 25 and 26. The following officers were elected: President, Dr. Davis Furman, Greenville, S. C.; vice-presidents, Drs. John H. Marsh, Fayetteville, N. C., William F. Drewry, Petersburg, Va., and Dr. Edward F. Parker, Charleston, S. C., and secretary, Dr. Rolfe E. Hughes, Laurens, S. C. The next session will be held at Danville, Va.

Carroll County (Ky.) Medical Society.—The physicians of the county met at Carrollton, March 9, and, after an address by Dr. Louis Frank, Louisville, councilor for the district, organized a county society, adopted the constitution and by-laws proposed by the American Medical Association, and elected the following officers: President, Dr. Francis H. Gaines, Carrollton;; vice-president, Dr. Percy V. Ellis, Ghent; secretary, Dr. Joseph S. Lehman, Carrollton; treasurer, Dr. J. H. Adcock, Carrollton, and board of censors, Drs. J. P. Wheeler, Prestonville, and W. O. Lindsay and J. Samuel Brown, Ghent.

Associated Health Authorities and Sanitarians of Pennsylvania.—The tenth annual meeting was held in Harrisburg, March 19 and 20. On the evening of March 19 the annual address was delivered by Dr. Lawrence F. Flick, on "The Duty of Boards of Health in the Prevention of Tuberculosis." The relation of boards of health to municipal councils, the working of the law authorizing boards of school directors to enforce sanitary laws of the state, the prevalence of smallpox, and the responsibility of boards of health for the prevention of consumption were among the subjects considered

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Feb. 8, 1903.

The President, Dr. H. Brooker Mills, in the Chair.

Headrest for Removal of Brain.

DR. ADDINELL HEWSON gave "An Exhibit of Dr. B. Stroud's Headrest for Removal of the Brain, Together with Remarks on Such Removal in a Private House." The instrument consisted of a horizontal flat piece of oak and an upright piece in which the head rests and is secured in place by two jaws, which clamps the head just above the mastoid process, thus holding the head absolutely horizontal and firm, the clamps being adjusted by means of thumb screws. With this instrument it is possible to remove the brain and the entire dura from the base of the skull, the dura being very easily removed in the case of a fresh body, while, of course, if the body has been dead for some time, very often the embalming fluids interfere with its removal, those containing zinc particularly having this effect.

DRS. T. TURNER THOMAS and JUDSON DALAND felt that the instrument would be particularly valuable for autopsies in private houses, and for very accurate work in medicolegal cases and where there is cerebrospinal disease.

The Diagnosis and Treatment of Bronchopneumonia.

DR. JUDSON DALAND read this paper and called attention to the fact that the disease has become very prevalent in the past ten years, occurring principally from November to March. There are a variety of causes, such as irritating gases, iron dust, silica and similar irritants, and in many of the constitutional infectious diseases bronchopneumonia is not an uncommon complication or sequela. Bronchopneumonia following influenza is prevalent during the winter, in which there occurs an inflammation of the bronchial tubes and alveoli, which is largely leucocytic, may involve only a few lobules or may involve many lobules in the same region, and not infrequently extends to both lungs. This is one of the peculiarities of bronchopneumonia and is more interesting because it bears on the question of diagnosis. The case may be of the most trifling character in the beginning and yet develop into bronchial pneumonia. The micro-organisms are usually the staphylococcus and streptococcus.

The author felt in the majority of cases the affection began primarily in bronchitis and later the alveoli became affected, mastoiditis also being a not uncommon complication. Thus this swelling of the bronchial tubes interferes with the passage of air through the lungs, and in the course of time produces a considerable area of collapse, which is very difficult to distinguish from bronchopneumonia, and also in association with these other conditions there is frequently spasm of the bronchial tubes. The author also believed that in certain cases of influenza there was an affection of the nerves that have to do with respiration, by which breathing is interfered with without mechanical obstruction. The author felt that, speaking broadly, it was practically impossible to clearly diagnose bronchopneumonia from the symptoms alone, excepting in those cases where the lobules invaded are so numerous that we have a condition analogous to that found in lobar pneumonia. The most important factors, therefore, in the diagnosis are physical examination and an examination of the sputum. In bronchopneumonia following influenza the area of dulness is usually found below the inferior angle of the scapula. The dulness may occur in either or both lungs and may involve the posterior-inferior lobes. In true lobar pneumonia it is impossible to diagnose the affection by the symptomatology or the physical signs, and the inference that it exists may be confirmed by the discovery of diplococci. Reference was made to the frequency with which the signs in this condition shift; an area of dulness being outlined one day, and on the occasion of the next visit the same area would probably be resonant on percussion, but the author felt this should be viewed rather as a corroboration than a doubt of the diagnosis. Attention was directed to the fact that too much stress in diagnosis should not be laid on the presence or absence of bronchial breathing, as frequently owing to the fact that the lungs are not completely aërated, breath sounds may be either absent or very much diminished, even where there is resonance on percussion. In the treatment of these conditions, absolute cleanliness of the bronchial cavities and naso-pharynx by the use of boric acid solutions was recommended. In order to render the secretions less acid, and also to stimulate the action of the glands the use of one liter of imported vichy, daily, or when it can not be obtained a watery solution of bicarbonate of sodium, one to two teaspoonfuls to the pint of water, was recommended. Iodid of sodium and of strontium were thought to be the best drugs, the former being best employed in the form of a saturated solution, beginning with 2 or 3 drops four times a day and increasing one drop a day until the dose reached five to ten drops four times a day. Most cases are benefited by 20 to 40 drops of the tincture of nux vomica and 1/20 to 1/30 of a grain of nitrate of strychnia at four-hour intervals. In cases where the cough is particularly distressing, 1/24 of a grain of heroin or 1/8 of a grain of codein was recommended. Forced breathing at intervals of four hours was recommended in order to more thoroughly clean out the bronchial tubes of their contents, to secure complete oxygenation and to secure complete inflation of the lungs. Attention was also directed to the importance of absolute rest, stimulation and good food, during the progress of the disease.

DISCUSSION.

DR. JAMES H. MCKEE referred to the difficulty experienced in differentiating between broncho-pneumonias following influenza and some typhoid pneumonias, and reported a case to illustrate. It began with an initiative chill, followed by high fever and a very irregular temperature, and presented all the physical signs of bronchopneumonia. On the 10th day it proved to be typhoid.

The subdivision of the bronchopneumonias, as made by Holt, was thought to be of great value, particularly with reference to the bronchopneumonias in children, as the acute congestive form would often prove fatal in these cases before any consolidation could be detected in the lungs. The speaker felt the symptomatology to be particularly deceiving in cases of bronchopneumonia following influenza, which is usually characterized by great fluctuations in the temperature, pulse and respiration. Among the most valuable physical signs were mentioned tympany and impaired breathing at the base of the lungs. Treatment of a simple character, and directed more to keeping up the vitality of the patient than to the modification of the course of the disease was recommended.

DR. SAMUEL WOLFE felt that more often was it necessary to make a diagnosis from negative than positive signs, and that diminished respiratory sounds at the bases of the lungs should always excite suspicion of this condition. While bronchial breathing was considered an ideal symptom, if present, he felt that it would be found only in rare cases.

In regard to treatment he did not approve of the deep breathing exercises in the cases where inflammation had already set in, believing that better results would be obtained by frequently changing the position of the patient, thus allowing the infected portion of the lung to keep aëration properly and avoid the injurious effects of gravitation. Where the inflammation had not already developed, he felt that these forced breathing exercises might be of value in aborting the pneumonia.

DR. HOWARD S. KINNE felt that forced breathing was inadvisable, as he believed that the lungs should be kept at rest as much as possible when there is acute inflammation. Bronchopneumonia, he stated, occurred more commonly in children, while lobar pneumonia is usually found in adults.

DR. JOHN B. TURNER felt that it was a great mistake to regard the pneumonia as being confined to the lungs entirely, as he believed it was a general disease. The importance of observation for some time after recovery in order to prevent such sequelæ as phthisis was commented on.

DR. JUDSON DALAND stated that he had never been able to conclusively demonstrate to his own satisfaction bronchopneumonia in the adult. The change of the position of the patient is of value in many instances. Forced breathing,

he thought, would act as a preventive in many instances; and any harm that might result would be more than counterbalanced by the good done to the lung.

La grippe and pneumonia render the individual more susceptible to phthisis, and, in many instances, there is, primarily, a small latent tubercular area, which, under the influence of some such disease as influenza, will become constitutional, thus calling for careful after-treatment. Cotton jackets and poultices seem to be very little used to-day with adults. Moist air is one of the most valuable therapeutic agents in these conditions, and can generally be obtained by keeping the air in the room moist.

In cases where there has been a constitutional disease and pulmonary manifestations, the neurotic element soon arises and becomes prominent. Collapse of the lung following pneumonia was thought to be frequent.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Acne.

Dr. D. W. Montgomery, in *Jour. of Cutaneous Diseases*, states that sulphur is without question our most valuable single agent in the treatment of most cases of acne. He recommends the following combinations:

℞.	Sulph. precip.	℥iss	6
	Spts. etheris	℥vi	25
	Alcoholis	℥iiiss	105
M.	Sig.: Apply locally; or:		
℞.	Potassii sulphuret.		
	Zinci sulph., āā	℥i	4
	Aquæ rosæ	℥iv	120
M.	Sig.: Apply locally; or:		
℞.	Sulph. precip.	gr. xx-xl	1.20-2.65
	Vaselini	℥i	30
M.	Sig.: Apply locally; or:		
℞.	Sulph. precip.	gr. xl	2.65
	Spts. camphoræ	℥ss	2
	Liquoris calcis	℥iv	120
M.	Sig.: Apply locally; or:		
℞.	Sulph. precip.	℥ii	8
	Etheris	℥iii	12
	Tinct. camph.	℥ss	15
	Spts. myrciæ	℥iii	90
M.	Sig.: As a local application.		

Dr. Sherwell recommends the following locally:

℞.	Potass. sulphuret.		
	Zinci sulph., āā	℥i	4
	Alcoholis		
	Aq. camphoræ, āā	℥i	30
	Aq. rosæ	℥ii	60
M.	Sig.: Apply locally.		

Internally he recommends the following on account of its beneficial effect on the pelvic viscera and on lithemic conditions which are commonly present in lithemic individuals:

℞.	Quininæ sulph.	gr. xxv	1.65
	Mag. sulph.	℥i	30
	Acidi sulph. dil.	℥ii	8
	Tinct. nucis vom.	℥ss	2
	Vini colchici		
	Ext. ergotæ flu., āā	℥iii-iv	12-15
	Glycerini		
	Aq. destil., āā, q. s. ad	℥iv	120
M.	Sig.: One dessertspoonful in water in the morning on rising and one-half that amount at bedtime.		

F. H. Beadles, in *Indian Med. Record*, states that the cause of the acne must be discovered if possible and treated. Improvement follows the reduction of meats, while a diet of milk, fruit, fish, etc., will improve most cases. The entire surface of the body, except the face, should be sponged with cold water and followed by brisk rubbing with a coarse towel.

He claims that arsenic is both useless and harmful, as well as calcium sulphid. In treating the face after rendering it aseptic, a masseeing ball should be rolled freely over the surface and the inconspicuous comedones are brought into view and removed by an extractor. A ring curette may be drawn over the surface of the lesions and their contents extracted.

Bleeding may be encouraged by hot water and the face bathed thoroughly for ten minutes before retiring with tincture of green soap and hot water. It is then wiped dry and the following applied:

℞.	Zinci sulph.		
	Potass. sulphuret., āā	℥i	4
	Aquæ rosæ q. s. ad	℥iv	120
M.	Sig.: To be applied locally at night.		

Tape Worm.

Steinbach, in *Med. World*, recommends the following in the treatment of tape worm:

℞.	Oleoresinæ aspidii	℥iss	6
	Olei ricini	℥iv	16
	Pulv. acaciæ		
	Sach. albi, āā	℥ii	8
	Extracti kamalæ	℥iss	6
	Aq. menth. pip. q. s. ad	℥ii	60
M.	Sig.: Take in the morning after twenty-four hours' fasting.		

Dr. D. R. Brower recommends the following combination:

℞.	Oleores. aspidii	m. xl	2.65
	Olei terebinthinæ	m. xx	1.30
	Spts. chloroformi	m. xx	1.30
	Olei ricini	℥ii	8
M.	Sig.: At one dose. The patient should be instructed to fast twenty-four hours previous to taking the teniafuge and to take a strong cathartic three or four hours after taking it.		

Shoemaker advises the following combination:

℞.	Oleoresinæ aspidii	℥ss	2
	Olei peponis expressi	℥ss	15
	Olei terebinthinæ	m. xxx	2
M.	Sig.: At one dose, after fasting, to be followed by a purgative.		

Acute Coryza.

The treatment of acute coryza or acute nasal catarrh should be considered from a standpoint of prophylactic, general and local treatment, according to Yeo, in *Clin. Therapeutics*. As prophylactic measures a removal or diminution of hypersensitiveness of the skin and mucous membranes. The use of the cold shower bath throughout the year or cold water applied to the head and neck on rising in the morning, thus counteracting the tendency to vascular asthenia.

Residence in a dry climate is certainly advisable. Sea bathing and sea air are of great value, especially in the chronic forms of nasal catarrh.

The author regards diaphoretics as of most benefit. Opium combined with diaphoretics is preferable and will relieve the most distressing symptoms, as follows:

℞.	Liq. opii sed.	m. x-xv	.65-1
	Vini ipecac.	m. v	30
	Spts. etheris nitrosi	℥i	4
	Liq. am. acetat.	℥iii	12
	Aq. camphoræ q. s. ad	℥iss	45
M.	Ft. haustus. Sig.: To be taken at bedtime.		

When opium and morphin are not well borne in small doses even, the following combination is recommended:

℞.	Spts. etheris nitrosi	℥iv	15
	Liq. ammon. acet.	℥ii	60
	Potass. bicarb.	gr. xl	2.65
	Vini ipecac.	m. xl	2.65
	Aquæ camphoræ q. s. ad.	℥viii	240
M.	Ft. mistura. Sig.: One or two tablespoonfuls every four or five hours. For children the foregoing is well adapted, given in doses of two teaspoonfuls. A combination of camphor with small doses of morphin is well borne:		
℞.	Liq. morph. acet.	m. xv	1
	Spts. camphoræ	m. x	.65
	mucilaginis	℥i	4
	Aquæ q. s. ad.	℥iss	45
M.	Sig.: To be taken at one dose at bedtime.		

Quinin should as a rule be given after the first twenty-four hours and sooner when there is a marked fever and a feeling of depression. It is best given according to the author in an effervescing saline mixture, as follows:

℞.	Potass. bicarb.		
	Sodii bicarb., āā	℥i	4
	Ammon. carb.	℥ss	2
	Syr. aurantii	℥ss	15
	Aquæ q. s. ad.....	℥viii	240
M.			
℞.	Quin. sulph.	gr. xii	75
	Pulv. acidi citrici	℥ii	8
	Sacch. lactis	℥i	4

M. Ft. chart. No. vi. Sig.: One powder dissolved in water and mixed with one and a half ounces of the mixture and taken three times a day.

When there is much aching and general discomfort in the limbs and other parts of the body the following containing salicin is recommended:

℞.	Salicin	gr. xv	1
	Potass. bicarb.	gr. xx	1 20
	Spts. etheris nit.	℥ss	2
	Liq. ammon. acet.	℥iii	12
	Aq. camphoræ q. s. ad.....	℥iss	45

M. Sig.: At one dose to be taken at bedtime.

In young children, if the throat is also involved, aconite in small doses gives the best results.

When belladonna is indicated the following combination serves the purpose:

℞.	Tinct. belladonnæ	m. xl	2 65
	Potassii chloratis	gr. xl	2 65
	Syr. limonis	℥iii	12
	Aquæ q. s. ad.....	℥ii	60

M. Ft. mistura. Sig.: Two teaspoonfuls to be taken every hour until relieved.

For local treatment, the following combination is recommended:

℞.	Liq. am. fortioris	℥i	4
	Spts. vini rect.	℥ii	8
	Acidi carbol	℥i	4
	Aquæ	℥ii	8

M. Sig.: Drop this mixture on some absorbent substance and inhale the vapor. The following is also of service in the earliest stage of nasal catarrh:

℞.	Pinol	℥ii	8
	Camphoræ	gr. xl	2 65
	Liq. am. fort.	℥i	4
	Spts. rect.	℥i	30

M. Ft. inhalatio.

As a powder to be insufflated the following:

℞.	Aluminis pulv.		
	Sodii boratis, āā	℥ss	2
	Menthol	gr. 1/3	02
	Zinci tannatis		
	Bismuthi tannatis, āā	gr. xlv	2 65
	Lycopodii	℥ii	8

M. Sig.: To be insufflated into the nares; or:

℞.	Zinci salicylatis		
	Bismuthi tannatis, āā	℥i	4
	Pulv. boraci	℥ss	2
	Salol	gr. xx	1 30
	Talci	℥ii	8

M. Sig.: As an insufflation into the nares.

Medicolegal.

Who Liable for Medical Attendance on Minor.—The case of Leach vs. Williams, as it is entitled in the Appellate Court of Indiana, Division No. 2, was brought by the latter party against the former, as guardian of a minor, to recover for medical services rendered the minor. The record was silent as to how and for what purpose the party sued was acting as guardian. The evidence also failed to show that the minor had any estate in the hands of the guardian. On the other hand, it showed that the guardian did not have any control or custody of the person of the minor, and did not, in any manner, contribute to his support. The minor was about 17 years old, and had always made his home with his parents, who furnished him with all the necessaries and comforts of life. Moreover, it appeared that the services sued for were procured by the authority of the father of the minor, and that the guardian sued knew nothing of it. It was also clear that the services were rendered on the credit of the father, for the account was originally charged to him, and the account rendered to him. Beside, the physician recognized the liability of the father by asking him, when he rendered his bill, to render an account he had against the physician, so that they might have a settlement, which some personal difficulties between them prevented them reaching. Under these circumstances, the physician obtained a judgment against the guardian in the Circuit Court, which is now reversed by the Appellate Court, which declares the evidence wholly insufficient to support the judgment. A father, the Appellate Court says, is chargeable with the care, support and maintenance of his minor child. It has been held that where a minor child lives in the family of a relative, and the father is alive and able to support it, the guardian of the child, in the absence of any contract on his part, can not be made liable for its support. The maintenance and care of a minor child include necessary medical attendance.

Employment of Surgeon to Attend Injured Servant.—In Lithgow Manufacturing Company vs. Samuel, the Court of Appeals of Kentucky affirms a judgment in favor of the latter party, a surgeon, who brought the action to recover for services rendered to one of the company's employes, who had been seriously injured in an accident in its foundry. The issue was made as to whether the surgeon had been employed by any one authorized to represent the company in that matter. The question was submitted to the jury. A number of witnesses was heard, and, the court says, while the evidence was not as clear and conclusive as was desirable, yet it presented about such a state of case as might not unreasonably be expected, under the circumstances attending a sudden and horrible accident, endangering, probably, the life of one to whom the corporation owed certain peculiar duties as master. At such a time it is not expected that parties should stop to negotiate a formal contract. Here there was evidence to the effect that the company's superintendent and general manager authorized the employment of the surgeon, and that, subsequently, with full knowledge of the fact that he had rendered the services to the injured man, and was continuing to do so, and was expected to continue, he ratified that employment. It was true, that was denied by the superintendent on the trial. Under these circumstances, the court holds that it was one of the cases that was peculiarly in the province of the jury to decide. Continuing, the court says that it still adheres to the doctrine that an unauthorized employment of a physician or surgeon to wait on an injured servant can not bind the master for payment of the surgeon's services, although the master may have been aware that the surgeon was rendering the services. In such case, ordinarily, the court says, the master is not bound to employ a surgeon to wait on one in his employment who may be injured while engaged in his work. However, if the cause of the injury is such that the master would be liable to the servant for damages, including medical bills, because of the master's negligence in any particular, and where the master recognizes this liability and does employ medical attention, or ratifies the employment made in his name, with full knowledge of the fact that it has been so made, the court perceives no sound reason why he should not pay for them.

Negligence of Surgeon of Mutual Benefit Hospital.—The California case of Brown vs. La Societe Francaise De Bienfaisance Mutuelle was brought to recover damages alleged to have been suffered by the party suing, while an inmate of the society's hospital, from the negligent and unskilful conduct of its surgeon in setting his fractured leg. The trial resulted in a judgment for $1,550, which is affirmed by the Supreme Court of California. On the appeal no question was made by the society as to the sufficiency of the evidence to

justify the verdict as to amount, or as to the negligence of the surgeon, but the sole question was as to the liability of the society therefor. The party suing was admitted to the society's hospital for surgical treatment on the terms of paying for the operation, $50, and for a separate room, if occupied by him, $3, or, if occupying the general ward, $2 per day. The operation was performed by the surgeon in chief of the society, who was paid by the month; the amounts received from the party suing going to the society. From this statement, it is said, it was clear that the contract of the party suing was with the society, and that the surgeon was merely its servant or agent. The society, therefore, unless excepted from the general rule of respondent superior (the superior or master must answer), was liable for his negligence. But the contention of the society was that it was a charitable institution, and that, as such, in the absence of allegation or proof of negligence in their selection, it was not liable for the negligence of its servants. In support of the legal proposition thus presented numerous authorities were cited, and, it is said that, though the proposition is not altogether undisputable, either on principle or authority, it might, for the purposes of the decision, be assumed to be correct. As to the remaining question, as to the alleged charitable character of the society, it appeared, from its by-laws, dated May 10, 1854, that it was originally organized as a voluntary association, but was afterwards incorporated by the filing of a certificate of election of trustees June 7, 1854, and on May 5, 1895, new by-laws were adopted. From these it appeared that "the society is established on the basis of mutuality for the treatment of sick members," or, as more specifically provided, for the purpose of securing to its members (without payment otherwise than of dues), medical and surgical treatment, including the services of its physicians, surgeons, apothecaries, dentists, nurses, etc., and also medicines. Nor was there found in it any provision for assistance to others except to paying patients, or sick persons, not members, admitted to treatment for agreed compensation. It was, therefore, it is held, merely an association for mutual profit or benefit, similar in its essential nature to other societies formed for such purposes. Assuming that it was within the powers of the society to adopt the new by-laws, the original by-laws must be regarded as superseded by the latter and, therefore, as immaterial to the question involved, which was as to the present character of the society, though it is stated that the conclusion would be in no way affected were the society still operating under its original by-laws. These, indeed, permitted, and even contemplated, the exercise of charity as one of the aims of the society; but there was nothing in them requiring the application of the funds of the society to such purposes; nor could the funds contributed by the members be regarded otherwise than as, beneficially, their own property. A contention that the surgeon was a sub-agent, appointed by the society as agent of the party suing and, therefore, the agent of the latter, is declared to be without merit.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Philadelphia Medical Journal.

March 7.

1 *Tropical Diseases. Charles F. Kieffer.
2 *The Ductless Glands as Organs of the First Importance in Vital Functions, and Their Relationship as Such to Disease and Therapeutics. Charles E. de M. Sajous.
3 *Gangrenous Destruction of the Pituitary Body, with Disintegration of the Blood, following a Fracture of the Sphenoid Bone and Subsequent Infection. Eugene Wasdin.
4 *Surgical Affections of the Biliary Tracts. John B. Deaver.

1. **Tropical Diseases.**—The points noticed in this lecture by Kieffer are the parasites, *Trichuris trichuria (Tricocephalus dispar)*, which seems to be very common, though not ordinarily producing serious symptoms; ascaris, which is much more common in the tropics than in the temperate regions, and gives rise to considerable trouble there as here. The main part of his lecture, however, is on the distribution and the symptoms of uncinariasis, diagnosed by ova in the feces. He cautions against using solvents of thymol after giving this drug, as fatal cases of poisoning have occurred. Alcohol, ether, glycerin and most oils act as solvents and should be avoided. Castor oil is a purgative which should be avoided in these cases and saline purges used instead.

2. **Ductless Glands and Their Importance.**—This article by Sajous is one which has received considerable attention in the newspapers. He thinks the adrenals have a most important vital function in blood oxidation and that the anterior pituitary body governs their function, they being connected through the sympathetic system. All general symptoms witnessed in disorders in which the blood is invaded by a poison of any kind are, in reality, manifestations of overactivity insufficiency or inactivity of the adrenals. The thyroid gland is also functionally interdependent with the pituitary bodies and adrenals. Together they constitute what he calls the "adrenal system." The organic compound or oxidizing substance which forms in the lungs from loose combination of the internal secretion of the adrenals with oxygen, he calls adrenoxin. A considerable portion of his paper is given up to the discussion of the functions of the leucocytes, which he finds are chiefly active in this oxygenation of the blood, the red corpuscles simply being carriers. The general conclusions as to leucocytes are given in the following:

1. Neutrophile leukocytes form:
Peptones, which combine with adrenoxin to sustain general metabolism, i. e., the vital process.
Myosinogen, which combines with adrenoxin to supply contractile energy to muscles.
Fibrinogen, which combines with adrenoxin to supply heat energy to the blood.
2. Eosinophile leukocytes form:
Hemoglobin, which loosely combines with adrenoxin to insure its storage in erythrocytes.
3. Basophile leukocytes form:
Myelin, the active principle of which, lecithin, combines with adrenoxin to develop nervous energy.

He also has a theory as to pancreatic secretion and the action of the posterior pituitary body as the general center of the nervous system governing metabolism. The latter part of his article is given up to the application of these principles to the pathology of certain diseases, fevers, tuberculosis, etc.

3. **Gangrene of the Pituitary Body.**—Wasdin reports a case in which, after fracture of the inferior maxilla, there were severe general symptoms of jaundice, high temperature, blood disintegration, etc. On autopsy it was found that the trouble was confined largely to the base of the brain, particularly to the contents of the sella turcica, the pituitary body. He was unable to diagnose the condition during life, and discusses it in relation to Dr. Sajous' theories. He says the acceptance of the influence of this hitherto obscure ductless gland, through the cervico-sympathetic system, on the secretion of the more well-known adrenal glands, and of the value of the adrenal secretion in the preservation of the intergrity of the blood, readily explains the puzzling facts in this case without the necessity of seeking the source of a sufficiently virulent toxin to have caused them.

4. **Surgical Affections of the Biliary Tracts.**—Deaver reviews the various surgical disorders of the biliary tracts, calculus, chronic catarrh, etc., of the gall bladder.

Medical Record, New York.

March 7.

5 *Radio-praxis. Henry G. Piffard.
6 *Feeding in Early Infancy—Home Modification of Milk. Joseph E. Winters.
7 *Plastic Artificial Vitreous in Mules' Operation. E. L. Oatman.
8 *Clinical Results with Antistreptococcus Serum in Scarlet Fever. Louis Fischer.

5. **Radio-Praxis.**—Piffard first calls attention to the fact that he, twenty-five years ago, employed sunlight for therapeutic purposes, using the whole spectrum, in other words, simply burning out the lesions. He then notices the history of the Finsen treatment and the Roentgen discovery, and points out the differences between the *x*-ray and ultra-violet rays and describes the apparatus used, especially for the latter. He is inclined to think that much of the good effects reported of the *x*-rays on malignant tumors can be just as well, if not better, accomplished by curettage, incision, actual cautery,

caustics, etc. There are many cases where surgeons will hesitate to use the knife, and with these the *x*-ray apparatus should be tried. The action of blue-violet rays on tuberculosis seems to be a genuine one, according to Piffard's observations. A number of points still needing further elucidation as regards the action of ultra-violet rays on cutaneous disorders are as to whether they are as effective as the *x*-rays; the tension that is required for generating them; the relative value of a spark from a coil or static machine, etc. In conclusion, he notices, particularly, the effects of radioactive substances, such as pitchblende, which seems to have many of the bad effects of the *x*-rays, though it is by no means certain that they are exclusively of this character.

6. **Infant Feeding.**—Winter's article is a lengthy one. He insists on the importance of nursing early in the infant's life, both for the mother and the child, but holds it manifest that the protraction of lactation to eight to ten months is not according to nature. The poorer classes, he thinks, should not be counseled to wean at the end of the second month for economic reasons, owing to the difficulty of securing pure, fresh, sweet milk, but, even with them, nursing should not be extended beyond five to six months. A child born in the spring should be weaned in the autumn, and one born in the autumn should be weaned before the summer. He gives directions as to the preparation of milk as a substitute for mother's milk, and a full series of formulas for each period in the infant's life up to the end of the year, and also the home modification of bottled milk during the summer months.

7. **Paraffin in Ophthalmic Operations.**—Oatman describes the method of using paraffin employed by him in a case to make a proper stump after Mules' operation. He offers the following as his "immature" conclusions from three cases in his experience:

When fistula follows the Mules' operation it will close spontaneously if a sufficient quantity of the artificial vitreous can be removed. That which remains will form a good support for an artificial eye.

Paraffin used for this purpose is prone to produce fistula by softening and getting between the lips of the wound, or into the track of a suture. These accidents are to be avoided by using paraffin, or some modification thereof, that will not soften at body temperature; also by so suturing the scleral wound that no aperture remains through which paraffin can exude.

A plastic material like paraffin will adapt itself to any inequalities on the surface of the glass shell, and ulceration from pressure is not apt to occur.

Paraffin beads are easily prepared, and may be used in special cases in which glass beads of the required shape or size are not obtainable.

8. **Anti-Streptococcic Serum.**—Fischer gives the results of his observations of the Baginsky method of treating scarlet fever, reporting two cases. He thinks it is too soon to formulate definite conclusions based on such limited experience, but the clinical results were striking. The effect of the serum on the temperature shows that it did inhibit bacterial products and the disappearance—almost melting away—of necrotic membranes after the fourth day is another striking fact. The swollen glands of the neck also subsided. A vital point consisted in a strengthening diet in addition to strict hygiene.

Medical News, New York.

March 7.

9 *Periduodenal Abscess Secondary to Ulcer of the Duodenum. William S. Bainbridge.
10 Mosquito Extermination in New York City. George A. Soper.
11 Some Practical Suggestions on Mosquito Extermination in New Jersey. Henry C. Weeks.
12 The Sanitary Aspect of the Mosquito Question. John B. Smith.
13 *The Symptomatology of Tabes: An Analysis of 140 Cases of Locomotor Ataxia. Joseph Collins.

9. **Periduodenal Abscess.**—Bainbridge reports a case and gives an epitome of the literature of this rather rare condition. He finds that altogether, including the case here reported, twenty-six are on record; twenty-two died undiagnosed; in two operation was performed, and in one a cure was obtained. The duodenum, though a deeply seated and fixed organ, is really in greater danger in its close relationship to the spine and right kidney than some others more superficially placed. He shows from the anatomy of the parts how an ulcer perforating the walls may give rise to simulation of appendicitis by following down the ascending colon. The most frequent symptoms are vomiting, pain, tenderness and resistance in the epigastric and right hypochondriac regions, constipation or obstipation, and sudden onset or shock. Melena or hematemesis are not common. There is little elevation of temperature unless complications arise, such as peritonitis, pleurisy, cholecystitis, stomach perforation, etc. It occurs most frequently in the male. The following should be specially thought of in connection with this disease, empyema, pleurisy with effusion, cancer of the pylorus, of the liver, pyopneumothorax, hydatid cyst, liver abscess, intestinal obstruction, gall-bladder disease and appendicitis, the latter being the most frequent condition simulated. The diagnosis is always difficult. Leucocytosis may be of some value. If there has been an indication of ulcer, like pain in the stomach two to six hours after eating, tenderness to the right of the twelfth dorsal vertebra, vomiting, especially of blood, and if sudden severe pain with increasing vomiting and collapse appear, operation is imperative.

13. **Tabes.**—Collins describes the various types, including the neuralgic, the sympathetic nervous type with vesical symptoms, crises, and arthropathies, the type in which optic atrophy develops early, cervical or high tabes, the slow appearing and the rapid appearing type. He is not quite sure whether a cerebral type should be included, not paresis, and is inclined to think that it should be. Illustrations are given of each of these, and an analysis of the initial symptoms in 126 cases. Pain was not so frequent as generally supposed by other observers, though it occurred in about 40 per cent. of the cases, and during the course of the disease in about 90 per cent. Paresthesia is one of the commonest symptoms, nearly as constant as pain, and present in 73 per cent.; girdle sensation in 30 per cent., or 45 per cent. altogether. Tactile sensory disturbances appeared in about 67 per cent.

American Medicine, Philadelphia.

March 7.

14 *The Technic of the Operation of Celiotomy as Practiced at the Gynecean Hospital, with the Report of 93 Consecutive Celiotomies without a Death. Henry D. Beyea.
15 *The Treatment of Suppurative Inflammation of the Kidneys. Frank Warner.
16 *Direct Fixation in Fractures. George W. Guthrie.
17 Aneurism of the Descending Aorta Displacing the Heart. Charles F. Beeson.
18 *Communicated Insanity or Psychic Infection. J. W. Wherry.
19 *Briefs on Physical Training. G. Frank Lydston.
20 The Ill Health of Herbert Spencer. George M. Gould.

14. **Celiotomy.**—Beyea describes in full detail the methods employed by the Gynecean Hospital, Philadelphia, and their results in 94 consecutive unselected cases, including hysteromyomectomy, the various operations on the appendages, panhysterectomy, operations for appendicitis, uterine displacements, gastric derangements, tuberculous peritonitis, etc. There was but one death, and that the result of a far advanced sarcoma of the uterine parenchyma involving all tissues to the pelvic bone. In none, regardless of the character of the disease, was there any suppuration of the abdominal incision, or hemorrhage in the tissues or other complication. Intestinal injury was repaired in five cases and recto-abdominal fistula in one. With the one exception all the patients recovered completely.

15. **Kidney Suppuration.**—Warner gives his experience with kidney suppurations, and holds there are many cases in which a very mild grade of pyelitis exists, curable by the timely administration of urinary antiseptics and by a judicious tonic course. The diagnosis is not always clear, but operative treatment is indicated absolutely only in prolonged cases with emaciation, hectic, etc.

16. **Fixation in Fractures.**—Guthrie advocates the direct fastening of fractures, and quotes a limited number of cases where it has been successfully employed. He also reports a case of his own observation of fracture of the olecranon treated under the ordinary home conditions in this manner with success. He does not hesitate about treating cases where operation is imperative, in the homes of the patients, using the common-sense means of disinfecting and sterilizing, including the use of rubber gloves, and not always subjecting the patient to the inconveniences and suffering of rushing them off to the hospital in order to get clean surgery.

18. **Communicated Insanity.**—A number of cases are reported by Wherry where one patient has communicated his or her delusion to another, usually brothers and sisters, though there was one case where it was communicated from husband to wife. He calls attention to the peculiar religious character of the delusions in the cases reported, and thinks it is only a few steps from the ordinary beliefs of religious faith to insane delusions in morbidly constituted individuals. He considers that the factor of heredity is, perhaps, overestimated in these cases.

19. **Physical Training.**—Lydston describes the effect of physical over-strain by myocardial degeneration, renal disease, emphysema, aneurism, general myasthenia and hernia. He speaks of the bad effects of a tight belt, restricting the abdominal muscles at a time when all the other muscles are having full play, and the dangers of alcohol and tobacco to athletes. He would taboo competitive athletics as ordinarily understood, though he admits its impracticability.

New York Medical Journal.

March 7.

21 *Some Scientific and Practical Aspects of Vaccination. P. H. Bryce.
22 *The Present Method of Medical School Inspection in New York. Charles Herrman.
23 *Uterine Inertia: Its Causes and Treatment. James Moran.
24 *Incomplete Transverse Congenital Occlusion of the Vagina, and a Theory as to Its Origin. Samuel M. Brickner.
25 *Expression of the Lid Margin as a Therapeutic Measure in Blepharitis and Its Complications. Percy Fridenberg.
26 The Detection of Renal and Vesical Calculi by Means of the X-Rays. Henry P. Moseley.
27 A Case of Abnormal Temperature. Lucien Lofton.

21. **Vaccination.**—Bryce holds that the official opinion is crystallized into the following conclusions: 1. Either that official supervision of the products of vaccine establishments by either state or federal officers is imperatively demanded; 2, or that the production in state or federal vaccine establishments of adequate supplies of vaccine of established quality, to be sent out free, or at cost, to municipalities, has become a necessity. He remarks that the capital and competition of large commercial houses supply and maintain a standard of excellence which, perhaps, individual states could not reach, but he thinks that public vaccinators should be appointed, whose experience will lead them to accept only standard reliable vaccine material and prevent the accidents which have injured the credit of this prophylactic measure.

22. **School Inspection.**—Herrman describes the methods at New York. There are eighty school inspectors for the Borough of Manhattan, each with 4,000 to 5,000 scholars to inspect. The class rooms are visited and each pupil examined once a week. Lists of pupils who have been absent on account of sickness are obtained; they are visited, and the character of the disease determined. The pupils are taught to use separate pencils and penholders. Children presenting symptoms of a contagious disease are immediately attended to and are visited by the district medical inspector, who advises when they are ready to return to school.

23. **Uterine Inertia.**—The causes of this condition and the dangers to the mother and child are noticed by Moran, who gives the treatment of the various special conditions. If, from excessive uterine distension, the membranes should be punctured and the excess of water allowed to escape, he does not use ergot, but prefers instruments, considering them a less risk in primary inertia. In primary inertia, from rigidity of the cervix, he usually gives chloral and morphin hypodermically, which tends to relax the os and soothe the patient. In some cases he uses local cocain applications. When the os is well dilated, strychnia sulphate 1/40 to 1/30 of a grain hypodermically, repeated in two hours, if necessary, and a little alcoholic stimulation. In secondary uterine inertia, he advises rest, a few hours of sleep, after which the pains will usually return with sufficient frequency and force to complete labor within a reasonable time.

24. **Transverse Occlusion of the Vagina.**—The following are Brickner's conclusions:

1. Transverse septa of the vagina are rare, occurring in about one in 5,000 cases, about .002 per cent.
2. They are derived from an inclusion by Müller's ducts of cells from the Wolffian duct or ducts after the formation of the genital cord, and are, therefore, epiblastic in origin.
3. Their perforation is proof of the normal conduct of Müller's ducts in all other respects.
4. Transverse septa of the vagina, being normal in adult sheep, whales, dugongs, the manatee, and the chimpanzee, they represent in the human being a reversion, "a return to an ancestral type." Their function is purely speculative, but may have to do with the facilitation of conception; and when they appear in the human female may have a similar purpose, in harmony with other minor defects of development.
5. The treatment of this condition is excision of the septum with suturing of the cut edges. In unmarried women no treatment is necessary. If the septum is first seen early in pregnancy, it may be excised; if during labor, a crucial incision will be sufficient, with subsequent removal of the septum. The prognosis for the child is usually bad unless the septum is incised early or unless it is not too strong to be burst by the advancing head; for the mother, it may result in serious lacerations or fatal hemorrhage.

25. **Blepharitis.**—Fridenberg calls attention to the utility of expression of the lid margins in blepharitis as a method of treatment and prophylaxis, and reports cases. He does not think it has a specific action or urge its use to the exclusion or neglect of other methods, but thinks it is a valuable aid that has been too much neglected.

Boston Medical and Surgical Journal.

March 5.

28 *A Research into the Means of Controlling the Blood Pressure. George Crile.
29 *On Routine Determination of Arterial Tension in Operating Room and Clinic. Harvey Cushing.
30 *Cyto-diagnosis: A Study of the Cellular Elements in Serous Effusions—A Preliminary Report. Percy Musgrave.
31 *Intestinal Obstruction Below the Ileocecal Junction. (Concluded.) Thomas H. Manley.
32 Symptoms Simulating Appendicitis Caused by an Intra-abdominal Band. James A. Keown.

28. **Blood Pressure.**—Crile considers the conditions of diminished blood pressure, shock and collapse, points out the value of adrenalin in these cases, and summarizes as follows:

In many instances the control of the blood pressure is synonymous with the control of life itself. Surgical shock is an exhaustion of the vaso-motor center. Neither the heart muscle, nor the cardio-inhibitory center, nor the cardio-accelerator center, nor the respiratory center, are other than secondarily involved. Collapse is due to a suspension of the function of the cardiac or of the vaso-motor mechanism. In shock therapeutic doses of strychnin are inert; physiologic doses are dangerous or fatal. If not fatal, increased exhaustion follows. There is no practical distinction to be made between external stimulation of this center, as in injuries and operation, and internal stimulation by vaso-motor stimulants, as by strychnin. Each in sufficient amount produces shock, and each, with equal logic, might be used to treat the shock produced by the other. Stimulants of the vaso-motor center are contraindicated. In shock cardiac stimulants have but a limited range of possible usefulness, and may be injurious. In collapse, stimulants may be useful because the centers are not exhausted.

Saline infusion in shock has a limited range of usefulness. In collapse it may be effective. The blood tolerates but a limited dilution with saline solution. Elimination takes place through the channels of absorption. Its accumulation in the splanchnic area may be sufficient to fix the diaphragm and the movable ribs, causing death by respiratory failure. Saline infusion in shock raises, but can not sustain, the blood pressure.

Adrenalin acts on the heart and blood vessels. It raises the blood pressure in the normal animal; in every degree of shock; when the medulla is cocainized, and in the decapitated animal. It is rapidly oxidized by the solid tissue and by the blood. Its effects are fleeting; it should be given continuously. By this means the circulation of the decapitated dog was maintained ten and one-half hours. In excessive dosage there is a marked stimulation of the vagal mechanism. Due caution must be exercised.

The pneumatic rubber suit provides an artificial peripheral resistance without injurious side effects, and gives a control over the blood pressure within a range of from 25 to 60 mm. mercury. By the combined use of artificial respiration, rhythmic pressure on the thorax and adrenalin injected into the jugular vein, animals which were apparently dead as long as fifteen minutes were resuscitated.

The suit referred to is made of a double layer of specially constructed rubber and, when inflated, gives a uniform pressure on the surface, producing an artificial peripheral resistance, thus preventing "intravenous hemorrhage" in and exhaustion of the vaso-motor center.

29. **The Routine Determination of Arterial Tension.**—The value of blood-pressure observations, especially in conditions of shock and in operative procedures, is insisted on by Cushing. It is especially when the central nervous system is involved in operations that they are of most value. Also in abdominal surgery there is a great field for them owing to the importance of the sphlanchnic vascular territory.

30. **Cyto-Diagnosis.**—The technic of cyto-diagnosis in serum is described, the formulæ, and the methods in various conditions such as pleurisies are noted in detail. A number of cases is also reported. Musgrave says he can state without

hesitation that the descriptions given by Widal and other observers have been accurate so far as his knowledge is concerned. He thinks the procedure will be found of clinical value after more thorough observation and study.

31. **Intestinal Obstruction.**—In this concluding lecture Manley describes the operative treatment, formation of an artificial anus, resection with anastomosis, etc. He notices the dangers of various surgical procedures and the importance of early operation where possible. The male subject is notoriously less tolerant of intraperitoneal exposure and manipulation than the female. Resection with anastomosis is the ideal procedure when the condition of the patient and the character of the lesion justify it. The risk of peritoneal contamination and the need of precision of technic are especially emphasized. In the rectum, cancer and luetic strictures most frequently call for surgical relief. The first and safest method is an enterostomy of the sigmoid above the pubis. This side-tracks the fecal current, and relieves urgent symptoms. The second is sacral resection in the male, or vaginal in the female, both of these contemplating the removal of the growth and rectal anastomosis. The last method involves a laparotomy as well as a section from below, and then drawing the third segment of the sigmoid down into the hiatus as a substitute for the displaced rectum, or after the diseased rectum is removed, establishing a left flank anus by the free, open end of the sigmoid. The difficulties of this operation are mentioned. Some of the operations depicted in the illustrations we meet are not only, he says, impracticable on the living, but impossible on the cadaver. The artist is usually innocent of any knowledge of anatomy or pathology.

St. Louis Medical Review.

March 7.

33 Report of a Case of Retroflexion of the Gravid Uterus. E. W. Saunders.

Cincinnati Lancet-Clinic.

March 7.

34 Materialism vs. Spiritualism. H. V. Sweringen.
35 Tuberculosis—Sanitation. H. H. Spiers.
36 Surgery of Prostate, Pancreas, Diaphragm and Spleen—Surgery of Pancreas. (Continued.) B. Merrill Ricketts.

Pennsylvania Medical Journal, Pittsburg.

February.

37 Address in Hygiene, Medical Society of the State of Pennsylvania. Edgar M. Green.
38 Address in Surgery. George D. Nutt.
39 *A Case of Gunshot Wounds of the Stomach, Liver, Lung and Head—Operation—Recovery. G. W. Wagoner.
40 The Treatment of Spina Bifida. Wm. V. Laws.
41 The Necessity of Prompt Interference in Strangulated Hernia. Edmund W. Holmes.
42 The Practical Side of Electro-thermic Hemostasis. A. J. Downes.
43 The Roentgen Treatment of Malignant Disease. Charles L. Leonard.
44 *The Treatment of the Insane in Private Practice. F. Savary Pearce.

39. **Gunshot Wounds.**—Wagoner reports a case in which a man was shot in the chest and head and it was found that the liver, lungs and stomach were involved. The special point of interest was the similarity of the abdominal wound to that of President McKinley, but it was more severe in that the liver and lungs were perforated and excessive hemorrhage occurred. In spite of embarrassment on account of religious prejudice, etc., and the very extensive operation and the incisions required, the patient recovered. Death seems to have been prevented at the critical point, by transfusion with normal salt solution. The stimulating and sustaining effects of the enemas of black coffee are also noted as of interest.

44.—See abstract in THE JOURNAL, xxxix, p. 857.

American Gynecology, New York.

January.

45 Report of a Case of Chorioma. H. S. Crossen. Pathologic Report. C. Fisch.
46 *The Surgical Treatment of Pancreatic Cysts, with Report of Two Cases. A. Morgan Cartledge.
47 *Uretero-ureteral Anastomosis. George Ben Johnston.
48 *Movable Right Kidney and Chronic Appendicitis. Walter P. Manton.
49 Presidential Address, Southern Surgical and Gynecological Association. W. E. B. Davis.
50 A Case of Cholecystectomy and Nephropexy. J. Shelton Horsley.
51 Atypical Cases of Ectopic Gestation, Illustrating the Difficulty in Diagnosis. Egbert H. Grandin.
52 The Early Diagnosis and Consecutive Treatment of Fibromyomatous Tumors of the Uterus. Leora G. Bowers.
53 A Critical Review of the Discussion on Hysterectomy for Puerperal Sepsis at the Fourth International Congress of Obstetrics and Gynecology in Rome, September, 1902. Hiram N. Vineberg.

46.—Ibid., p. 1338.

47. **Uretero-Ureteral Anastomosis.**—Johnston reports a case operated on by a modified Van Hook operation with good success.

48. **Movable Right Kidney and Appendicitis.**—The points emphasized by Manton are: 1. With obscure abdominal conditions, even without discoverable pelvic disorder, a diagnosis should not be attempted until movable kidney and appendicular disease can be excluded by careful abdominal palpation. 2. When nephroptosis and appendicitis are present, operations on the uterus and adnexa alone will not be followed by cure of the patient unless one or both of these conditions have also been removed. The conditions present will govern the question of anchoring the kidney and removal of the appendix together. In movable kidney of the first degree ablation of the appendix alone will generally be all that is necessary. In prolapse of the second degree both operations may be necessary according to the severity of the symptoms, and in the third degree both the appendix and the kidney should receive attention. If the appendicitis is of a mild type and the nephroptosis marked, generally the mere fixing of the kidney to the lumbar wall will, by restoring the circulation in the appendix, cause the latter to resume its normal position or at least will result in a cessation of symptoms.

Annals of Surgery, Philadelphia.

March.

54 *Neurofibromatosis of the Nerves of the Tongue (Macroglossia neurofibromatosa) and of Certain Other Nerves of the Head and Neck. Francis C. Abbott and Samuel G. Shattock.
55 *Report of Sixty Cases of Actinomycosis. R. von Baracz.
56 Extradural Hemorrhage from Rupture of the Middle Meningeal Artery. John H. Jopson.
57 New Instruments for the Treatment of Esophageal Stricture. Theodore Dunham.
58 Knife-Blade Removed from Lung. James F. Baldwin.
59 *Acute Yellow Atrophy of the Liver as a Sequela to Appendectomy. Max Ballin.
60 *Primary Retroperitoneal Solid Tumors. Richard Douglas.
61 *Closure by Suture of Intestinal Perforations Complicating Typhoid Fever. F. Tilden Brown.
62 *Note on the Frequent Great Disparity between Falls upon the Buttocks and the Subsequent Persistent Pain and Irremediable Helplessness in Persons in Advanced Years. Oscar H. Allis.
63 Hygroma and Fibroma of the Tuber Ischii Bursæ. Emanuel Friend.
64 Blank-Cartridge Wound Infected with Tetanus Bacilli; Prompt Excision; No Tetanus. John B. Bain.
65 *Dislocation of Individual Carpal Bones, with Report of a Case of Luxation of the Scaphoid and Semilunar. William Hessert.
66 *The Treatment of Infantile Spastic Paralysis. Robert Jones.

54. **Macroglossia Neurofibromatosa.**—The case reported by Abbott and Shattock, though put under the head of macroglossia in which it clinically falls, has nothing in common with the ordinary lymph or hemangiomatous form of the disease, and requires differentiation by such title as here given. The case is carefully reported and the literature briefly discussed.

55. **Actinomycosis.**—Von Baracz finds that actinomycosis is produced solely by the *Streptothrix actinomycotica*. He discredits the theory that the disease enters through decayed teeth. They favor the occurrence, however, by making softened and swollen gums an easy entrance. The fungus rarely develops in the mucous membrane of the mouth itself; it wanders toward the surface of the body, and develops either in the region of the angle of the lower jaw or lower in the neck. The bones are never primarily affected in actinomycosis of the jaws. The central bone forms of Poncet do not exist. His first cases were treated by operation, consisting of curettement and extraction of teeth. By hypodermic injections of irritants like tincture of iodin, and 20 per cent. solutions of silver nitrate, he was able to produce a connective tissue wall around the softening area, and in this manner he was able to cure his last 9 cases without any operative interference. When it attacks the thorax or the lungs the prognosis is unfavorable. In abdominal actinomycosis the fungus always enters the body

through the mucous membrane of the alimentary tract with vegetable bodies, which usually lodge in the region of the cecum or appendix. In these cases the prognosis is good only if the disease is limited; if, however, the prevertebral tissue, liver or the portal veins become involved, it is very bad. Von Baracz considers that only one form of fungus produces this condition. It is easily diagnosed microscopically and may be even possible to diagnose macroscopically with some degree of certainty.

59. **Acute Yellow Atrophy of the Liver.**—Ballin reports a case with favorable outcome and rather favors the theory that the disease is due to the action of chloroform rather than infection, though he points out that in all cases there was an inflammatory condition pre-existing. As a prophylactic he would advise against the prolonged use of chloroform whenever alcohol or some long chronic ailment has caused catarrh of the liver ducts, especially when we have to do with inflammatory visceral conditions. The narcosis may be begun with chloroform, but ether should soon be substituted. In the case of malignant jaundice, the chances are unfavorable. Success in his case he attributes to venesection and subsequent intravenous saline infusion.

60. **Primary Retroperitoneal Solid Tumors.**—The tumor in the case reported by Douglas was a lipomyxoma with a round-celled sarcomatous base, weighing fourteen and one-half pounds. The varieties, etiology, pathology, etc., are discussed. He remarks that the prognosis in the innocent forms is ultimately as grave as in sarcoma, the disturbances from pressure finally bringing about death from marasmus, and the change to malignancy should be considered. Operative results have been in some cases successful as in the one here reported. The contra-indications are pronounced cachexia, metastasis, and manifest universal attachments. After opening the abdomen the condition may be found inoperable. The dangers present, especially in removal of these encapsulated tumors, are hemorrhage and necrosis of the intestine or parietal peritoneum. If the intestinal circulation is impaired, resection of the gut may be required. Drainage must be provided, and is usually best obtained through the loins.

61. **Typhoid Perforation.**—In the one of the three cases here reported by Brown that recovered there was a faint omental agglutination occluding a very recent perforation, and this suggests to him the possibility of intestinal immobilization as advocated by Ochsner, rigorously observed, bringing about a natural instead of a surgical closure of the lesion. He does not wish, however, to be understood as opposing surgical measures, but where it is delayed or absolutely refused, the necessity of using every possible recourse to aid nature.

62. **Hip Injuries in the Aged.**—Allis calls attention to severe symptoms occasionally occurring from very slight falls on the buttocks. He notices the several theories to account for them, such as, 1, osteophytes springing up about the injured joints. He found this condition in one of his patients. 2. Concussion of the joint. 3. The sciatic nerve may be injured. He has no facts, however, to support this last theory nor another one as to tearing of the ligamentum teres. If the pain persists after one or two months, operation may be advisable and is warranted provided the age and strength of the patient permits.

63. **Carpal Dislocation.**—Hessert calls attention to the probably more frequent occurrence of these injuries than has been generally considered, and gives an analysis of the reported cases.

66. **Treatment of Infantile Spastic Paralysis.**—This gives in substance the same general ideas as the article abstracted by us in THE JOURNAL of March 7, p. 677, from the *Lancet*.

American Journal of the Medical Sciences, Philadelphia.

March.

67 *Metastatic Carcinoma of the Choroid, with Report of a Case and Review of the Literature. E. L. Oatman.
68 A Report of Cases of Anemia, with Observations upon Their Symptoms and Morphology of the Blood. J. Alison Scott.
69 A Case of Banti's Disease, with Diffuse Productive Nephritis. Cyrus W. Field.
70 *Articular Rheumatism and Some Allied Conditions. Alfred Stengel.
71 Two Cases of Complete Bilateral Duplication of the Ureters. A. H. Gould.
72 Aphasia in Acute Disease, with Report of a Case Complicating Smallpox. Charles J. Aldrich.
73 *The Clinical Value of Blood Pressure Determinations as a Guide to Stimulation in Sick Children. Henry W. Cook.
74 *Malarial Fever in Texas: The Financial Loss Arising from the Disease, and Its Prevention. Albert Woldert.
75 *Upon the Association of Epilepsy and Heart Disease. T. L. Chadbourne.
76 *Hydatiform Mole: With a Report of Two Cases and Clinical Deductions from 210 Reported Cases. Palmer Findley.
77 *Entrance of Air into the Veins—A Reply to Dr. Hare. Malcolm Goodridge.

67. **Carcinoma of the Choroid.**—After a carefully reported case, Oatman discusses the general appearances of this condition, briefly reviewing the principal cases on record. He finds that the literature yields thirty cases which may be considered genuine. It usually occurs early in middle life. The primary growths are mainly in the breast, though other organs may be primarily involved. This excessive incidence of breast cancer is the cause of the greater number of females affected with choroidal carcinoma. The theory that the left eye is the most frequently invaded is not supported by his statistics, and both eyes have been involved in one-third of the cases. The deposit always occurs posteriorly, near the point where a short ciliary artery enters the globe, and appears in the corresponding region of the second eye when the latter is attacked, indicating that the second eye is not invaded by way of the lymph channels of the optic nerve and chiasm. The typical shape is a flat discoid thickening of the choroid with a central elevation, sloping off to the periphery. The eye symptoms rapidly progress until the destruction of vision in two to eight weeks due to the early and extensive retinal detachment. The tension is increased in about one-third of the cases and diminished or normal in over two-thirds. The average duration of life after eye symptoms appear is six and one-half months. He gives in parallel columns the distinctive points between sarcoma and carcinoma. The condition is hopeless. He does not advise operative interference as it may hasten the death.

69. **Banti's Disease.**—Field's article describes a case and discusses the condition, ending with the following conclusions:

1. There are four conditions, more or less closely related, which may be distinguished as follows: Enlargement of the spleen with anemia and the later development of a cirrhotic process in the liver may be separated from cirrhosis of the liver, with secondary enlargement of the spleen, by the fact that in the latter condition the spleen never attains the size that it does in the former. Both these conditions may be separated from splenic anemia and primary splenomegaly by the presence of the cirrhosis of the liver, while these two latter conditions may only be differentiated from one another after a microscopic examination of the spleen.

2. The case here reported should be placed among those cases termed "Banti's disease" for three reasons: (*a*) The very great enlargement of the spleen; (*b*) the presence of a cirrhotic process in the liver; (*c*) the fact that the enlargement of the spleen was due to a general hyperplasia, but more especially of the connective tissue.

3. The present case, exhibiting an advanced chronic productive nephritis, somewhat extends the scope of the pathologic anatomy of Banti's disease. Speculation as to the etiology of the disease seems at present premature, but the increasing recognition of the occurrence of transitional cases connecting together Banti's disease, splenic anemia, and diffuse cirrhosis of the liver suggests an origin from a common cause emanating from the gastrointestinal tract.

70. **Rheumatism.**—Three cases of mild acute rheumatism, one of subacute, one of neuritic affection of the peripheral nerves, together with one of rheumatic arthritis are described by Stengel. He considers the latter disease partly nervous and partly rheumatic. He thinks the history of the cases of this condition indicates deterioration of the nerve force and loss of vitality and is entirely compatible with the theory of primary changes in the nervous system as constituting its pathology. The microbic theory of rheumatism is thought by him not worth serious consideration.

73. **Blood Pressure Determination.**—Cook gives the results of blood pressure determination in sick children and calls attention to the importance of this method as an indication for stimulant treatment. There is no reason, he thinks, why a blood pressure chart should not be kept as well as one for the temperature or pulse where a trained nurse is employed. He does not make it take the place of other signs and symptoms, but simply insists that the accurate estimation of arterial tension furnishes additional aid to stimulant therapy.

74. **Malaria.**—Woldert reports the conditions in Texas favoring malaria. The anopheles are exceedingly numerous and he gives figures showing the financial burden which malaria is on the state. For destroying the larvæ of mosquitoes he finds a strong solution of tobacco and kerosene oil, one pound to ten gallons, most efficient.

75. **Epilepsy and Heart Disease.**—From a careful study of the subject, Chadbourne concludes that there is nothing to show to his satisfaction that there exists a direct connection between the vascular lesions and epilepsy. The administration of digitalis where it seemed indicated, did not apparently have any appreciable effect on the attacks. In no case was there any noteworthy improvement in the condition of the heart and the increasing severity of the heart disease did not seem to affect the attacks. It is, therefore, more than doubtful that the occurrence of heart lesions in epilepsy is anything more than a coincidence. At least the verdict of "not proven" must stand for the present. In senile cases, the evidence from the literature seems a little stronger, but his own observation is not supporting, and for satisfactory proof that the cardiovascular disease is the cause of epilepsy, we must adhere to the postulates of Stintzing: 1. That the heart disease must precede the epilepsy; 2, other causes must be excluded; 3, the coincidence must be frequent; 4, improvement in the heart disease must improve the epilepsy. The first condition is satisfied in many cases as is also the fourth, and a number of cases are recorded, though not in his own series. He does not find the coincidence frequent and the exclusion of other causes seems almost impossible.

76. **Hydatiform Mole.**—Findley summarizes in substance as follows: Nothing is known of the cause. It usually occurs between 20 and 30, and is more than twice as frequent in multiparæ. The weight of evidence is in favor of a maternal origin, and the vesicular degeneration of the chorionic villi resulting from a disturbed maternal circulation. There is no proof that cystic degeneration of the ovary has any influence. It is so common as compared with the latter that it is not likely they stand in relation of cause and effect. Malignant degeneration of hydatiform mole occurs in about 16 per cent. of all cases. No sharp line can be drawn between benign and malignant hydatiform moles and macroscopic and microscopic examination may not determine the character. The length of time the mole remains in the uterus does not influence its disposition to become malignant. The diagnosis can not be made with certainty without seeing the vesicles. They are seldom expelled spontaneously before the abortion is in progress, therefore, diagnosis is rarely established until expulsion. The most common clinical evidence is the rapid uterine development and hemorrhage, also the irregular shape and consistency of the uterus. In view of the tendency of hydatiform mole to undergo malignant degeneration, our only safeguard lies in early recognition and immediate removal, however limited the degeneration may be. Ergot and vaginal packs will control the hemorrhage and often excite the uterus to contract and expel the growth. The curette should not be used for fear of perforation of the overstretched uterine walls. After the mole is expelled always explore the uterus with the finger, irrigate, and pack with antiseptic gauze. Two weeks after expulsion of the mole it is well to curette the uterus and examine the scrapings for syncytial invasion, and if found in the act of proliferating, hysterectomy should be performed. About three years of watchful expectancy should follow the expulsion. In the event of uterine hemorrhage an exploratory curettage should be made for microscopic examination of the scrapings. All new growths in the vagina or lungs should be regarded with suspicion. He gives a detailed summary of the statistics from reports of 210 cases. He finds also that contrary to the usual statement that there is a tendency to development of two or more hydatid moles, it is found to be the great exception.

77. **Entrance of Air into the Veins.**—Goodridge combats Hare's statement as to the innocuousness of the introduction of air into the veins. He holds that the statement that entrance of small quantities of air into the veins need not be a source of anxiety is pernicious teaching and may lead to carelessness.

University of Pennsylvania Medical Bulletin, Philadelphia.

February.

78 *A Report of a Case of Chronic Acetanilid Poisoning, with Marked Alterations in the Blood. Alfred Stengel and C. Y. White.
79 *A Practical Clinical Method for Determining Blood Pressure in Man, with a Discussion of the Methods Hitherto Employed. William B. Stanton.
80 *The Elevation of the Stomach in Gastroptosis by Surgical Plication of the Gastrohepatic and Gastrophrenic Ligaments: an Original Operation. Henry D. Beyea.
81 *Traumatic Lesions of the Spinal Cord without Fracture of the Vertebræ. William G. Spiller.
82 Osteopsathyrosis: With the Review of a Case Having Sustained 22 Fractures in a Period of Ten Years. Montgomery H. Biggs.

78. **Chronic Acetanilid Poisoning.**—In the case described by Stengel and White, the patient had been taking for years sometimes as much as 15 or 20 three-grain acetanilid capsules per diem. Before using them she had taken antikamnia and other antipyretic anodynes. The appearance of the case was one of cyanosis due to complete disorganization, and bleeding was first resorted to. The drug habit had been denied, but was elucidated during the progress of the case. There was a very marked anemia with nucleated cells, some of them red corpuscles. It had been diagnosed by a physician as due to an intraventricular cardiac lesion, but the progress of the case proved that no such condition was present. There was a number of separate attacks of cyanosis during the treatment, which were afterwards found to be due to the drug. Pronounced enlargement of the spleen was an interesting feature.

79. **The Blood Pressure.**—Stanton describes the apparatus and methods and gives the history of the subject. He describes a new appliance; a modification of the Riva-Rocci apparatus, which he devised and which is employed in the Pennsylvania University Hospital.

80.—See abstract in THE JOURNAL, xxxix, p. 857.

81. **Spinal Concussion.**—Spiller describes a case without injury to the vertebra or any evidence of mechanical pressure. There was marked disorganization of the cervical cord finally ending in death, though there was marked improvement in the paralysis.

Maryland Medical Journal, Baltimore.

February.

83 *The Future Policy of Maryland in the Care of Her Insane. Henry M. Hurd.
84 A Case of Ruptured Uterus Successfully Treated by Laparotomy. Randolph Winslow.
85 Surgery in Diabetics. H. A. Fowler.

83. **State Care of the Insane.**—Hurd discusses the conditions in Maryland and calls attention to the advisability of thorough state care, though the richly-endowed institutions in that state make this need somewhat less than in some other states.

Journal of Advanced Therapeutics, New York.

February.

86 *Rheumatoid Arthritis. F. B. Bishop.
87 *Therapeutics of Dry Hot Air. Clarence E. Skinner.
88 A New Combined Electric Arc and Incandescent Radiant Light and Heat Bath. Sigismund Cohn.
89 The Rational Basis of Electricity in Gynecology. G. Betton Massey.

86. **Rheumatoid Arthritis.**—Bishop credits the disease to defective nutrition, too much use of starchy food, etc. He thinks that a properly-regulated diet and electricity, plenty of red meat, etc., are required. He gives illustrations of cases treated by electricity, which he claims increases the local nutritive functions of the joints, skin and muscles and also of the organs of excretion and secretion. The cases he reports seem to have been wonderfully benefited.

87. **Dry Hot Air.**—Skinner concludes that the advantages of dry hot air in local sepsis are: 1. Rapid relief of pain. 2. The induction of hyperleucocytosis, whereby the infective process is frequently abruptly arrested and nearly always prevented from spreading from structure to structure. 3. Relief of the nerve centers to a large extent from toxin depression, because of an increase in the process of elimination. 4. The avoidance of reaction from drug stimulation, because an amount of depression sufficient to demand the same does not

ordinarily obtain after the administration of hot air has been commenced.

Atlanta Journal-Record of Medicine.

February.

90 *Parotitis Following Typhoid Fever. E. Bates Block.
91 Typhoid Fever; Its Antiseptic Treatment in 25 Consecutive Cases. James Billingslea.

90. **Post-Typhoid Parotitis.**—Block describes a case and discusses the theories of its origin. Thus far no instance has to his knowledge been reported of the finding of the typhoid bacillus in parotitis, and he discusses at some length Paget's theory of reflex nervous influence in the case. To prove this all bacterial causes should be excluded by careful bacteriologic examination in a number of cases, but he thinks that the reflex nervous influence may render the parotid more susceptible to infection. The subject needs further study.

Ophthalmic Record, Chicago.

February.

92 *The Value of Salicylate of Sodium in Large Doses in Inflammatory Eye Diseases. H. Gradle.
93 Panophthalmitis from Infection with the Micrococcus Lanceolatus without a Perforating Wound of the Eyeball. John E. Weeks.
94 The Physical Aspects of a Theory of Color Vision. F. W. Edridge-Green.
95 *Report of Two Cases of Congenital Anomalies of the Eyes, Illustrating the Transmission of Such Defects from Mother to Daughter. Wm. C. Posey.
96 *Trichloracetic Acid Treatment of Infective Ulcers of the Cornea. Albert E. Bulson, Jr.
97 *Concerning the Disappearance of the Lesions in Circinate Retinitis. G. E. de Schweinitz.

92. **The Salicylates in Eye Diseases.**—Gradle reports his experience with the salicylates in the various forms of eye disease. He finds the salicylates advantageous in that form of apparent episcleritis, which he has elsewhere described as subconjunctival inflammation. He has used them in this as well as other types of episcleritis after other drugs have failed, with decided benefit. They have a striking effect on the minute superficial corneal infiltrates which occur after slight trauma. In the ordinary or syphilitic cases of keratitis, they have not been specially useful, excepting perhaps in the diffuse keratitis of scrofulous children or in gouty subjects. He gives an account of a case of nodular sclero-keratitis in which they were used with decided benefit. In the ordinary typical iritis they have been disappointing, and he has had only negative results in typical cyclitis. But in the atypical forms of uncertain duration and usually of protracted course, they have been almost specific. Other conditions in which he has found them of benefit are the sympathetic inflammations and the rare cases of non-traumatic and non-suppurative tenonitis. He has not seen much benefit in what has been called uveitis or acute inflammation of the retina or of the optic nerve. But in the chronic uveitis, of indefinite duration, they have a marked control over the intensity of the symptoms. He agrees with Gifford in the necessity for large doses. An adult requires 20 grains of sodium salicylate at least four to five times a day, while if 25 grains can be tolerated 5 to 6 times or even oftener a day, the quicker the results obtained, but when such large doses have no effect within forty-eight to sixty hours, it is no use continuing. By using 5-gr. tablets, coated over as desired, the stomach irritation is avoided. The limit to its use is generally indicated by tinnitus or a feeling of confusion.

95. **Congenital Ocular Anomalies.**—Posey reports two cases, mother and daughter, both possessing colobomatous appearing conditions suggesting imperfect closure in the fetal cleft.

96. **Trichloracetic Acid in Corneal Ulcer.**—Two cases thus treated are reported by Bulson. His experience leads him to believe that in purulent ulcer of the cornea no matter what the character of the infection, treatment with trichloracetic acid is superior to pure carbolic acid or any other caustic with which he is familiar and much safer than cautery or galvanocautery and more efficient than curettage.

97. **Circinate Retinitis.**—Three cases are briefly reported by de Schweinitz, in all three of which the white bodies of circinate retinitis had more or less disappeared. He discusses the condition and says the conclusion is that given a case of this type, a fatal prognosis as regards vision should not be immediately given and all reasonable therapeutic measures given a fair trial. It may be, he says, that the disease has not been long enough persistent or pronounced to bring about destruction of the areas involved or it may be that Gunn's explanation that the zone of white is a manifestation of long-standing edema is correct. He has some faith in the iodids in these cases, especially the iodid of sodium. Mercury bichlorid seems useful. He would also try subconjunctival saline injections and perhaps pilocarpin diaphoresis.

Therapeutic Gazette, Detroit.

February 15.

98 Treatment of Prostatic Hypertrophy. Edward Martin.
99 *Some Experience with the X-Ray as a Therapeutic Agent. George G. Ross and Martin I. Wilbert.
100 Some American Contributions to the History of Modern Therapy. Simon Baruch.
101 Ethyl Bromid as a General Anesthetic. O. E. Bloch.
102 Some Thoughts on Morphin, Cocain and Heroin. Samuel E. Earp.
103 Observations on Skin Cancer, with Remarks on Its Treatment by Cauterization and Excision. Levi J. Hammond.

99. **The X-Ray.**—Ross and Wilbert find the anesthetic effect of the *x*-ray of decided advantage, though they do not find it so valuable as a curative agent in all malignant growths. In lupus and skin epithelioma it seems to have a decided value.

Medical Fortnightly, St. Louis.

February 25.

104 *How Not to Be Nervous. Hugh T. Patrick.
105 What the State and the Municipality Can Do to Create an Environment Favorable to Health. M. V. Ball.
106 Hyperostosis Cranii (Cephalonmegaly). F. Savary Pearce.
107 The Resuscitation of the Newly-Born. Henry T. Duffield.
108 Remarks on the Treatment of Parasitic Diseases of the Skin. W. V. Loftus.

104.—See abstract in THE JOURNAL, XXXIX, p. 1066.

Canadian Practitioner and Review, Toronto.

February.

109 *Rudolph Virchow—An Appreciation. Charles A. L. Reed.
110 The Treatment of Septic Abortion. K. C. McIlwraith.
111 Placenta Previa. Howard D. Livingstone.
112 Mirror Writing. Robert D. Rudolf.
113 Case in Practice. (Swallowed Coin.) S. McCallum.
114 Glimpses from the History of Medicine. H. S. Hutchison.
115 Herpes Gestationis. Helen MacMurchy.

109.—This article appeared elsewhere. See THE JOURNAL of February 28, title 30, p. 606.

Medical Age, Detroit, Mich.

February 25.

116 Tendon Grafting. Daniel La Ferté.
117 The Treatment of Chronic Diarrhea. Charles D. Aaron.
118 The Present Status of Mercurial Medication in Syphilis. Henry B. Hollen.

Quarterly Journal of Inebriety, Hartford.

January.

119 Patent and Proprietary Medicines as the Cause of the Alcohol and Opium Habit or Other Forms of Narcomania, with Some Suggestions as to How the Evil May be Remedied. Lewis D. Mason.
120 General Principles of Treatment. T. D. Crothers.
121 Note on the Higher Use of Hypnotism and Suggestion, with Special Reference to the Treatment of Inebriety. R. Osgood Mason.
122 Restraint and Moral Measures in the Treatment of Inebriety. S. B. Elliott.
123 The Treatment of Drug Addiction. J. H. Kellogg.
124 Alcoholism; Its Control and Cure in Sanatoriums. George H. McMichael.
125 Is Modern Pharmacy Inimical to Moral Health? N. Roe Bradner.
126 The Effect of Alcohol upon the Nervous System, the Mind and Heredity. Albert E. Sterne.
127 What Is the Cause of the Increased Number of Suicides, Homicides, and Murders? N. S. Davis.

Pediatrics, New York.

February.

128 Congenital Nystagmus (Hereditary). Wm. J. Greanellé.
129 Lumbar Puncture and Its Value, Especially in Cases of Meningitis. W. B. Warrington.
130 *The Treatment of Infantile Spastic Paralysis. Robert Jones.

130.—See also title 66 above.

St. Paul Medical Journal.

March.

131 Fractures in or Near the Joints. Arthur J. Gillette.
132 Head Injuries in Reference to Intracranial Tension. Frederic S. Dennis.
133 Gastric Ulcer: Etiology, Symptomatology and Diagnosis. M. C. Millet.
134 Fracture of the Long Bones. G. R. Curran.
135 Rural Water Supplies in Minnesota. H. C. Carel.
136 Anencephalus—Spina Bifida. Owen W. Parker.

137 Report of a Case of Carcinoma of the Uterus Treated with the X-Rays. Charles R. Ball.

Southern California Practitioner, Los Angeles.

February.

138 Louis Pasteur—A Character Study. J. H. Utley.
139 Radical Operative Treatment of Chronic Suppurative Otitis Media. B. F. Church.
140 Treatment of Bright's Disease. John C. King.
141 In Eastern Hospitals. A. S. Parker.
142 Health of Los Angeles. L. M. Powers.
143 An American Oculist in Berlin. A. C. Rogers.

New Orleans Medical and Surgical Journal.

March.

144 An Atypical Case of Cancer of the Stomach. Otto Lerch.

Clinical Review, Chicago.

March.

145 Floating Kidney—Inguinal Hernia. W. W. Keen.
146 Lecture on Gynecology. Franklin H. Martin.
147 A Surgical Clinic. (Tubercular Hydrops, etc.) N. Senn.
148 Treatment of Rickets. Isaac A. Abt.
149 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.

Kansas City Medical Record.

February.

150 Report of a Case of Interest at the Kansas City Hospital. R. M. Tinney.
151 "She Ate Her Own Hair." G. W. Main.

Medical Sentinel, Portland, Ore.

February.

152 The Pathology and Treatment of Major Epilepsy. William House.
153 The Prognosis of Ascending Gonorrhea in Women. L. C. McCalla.
154 Tetanus Traumaticus—A Case Report and Review of Subject. H. A. Castle.
155 Bacteriology from a Humorous Standpoint. J. Hood Owings.
156 The Medical Department of the U. S. Army. R. G. Ebert.

Journal of Medicine and Science, Portland, Me.

February.

157 Some Common Diseases of the Scalp and Face. G. A. Pudor.
158 Suprapubic Lithotomy. C. E. Williams.
159 Vaginal and Rectal Operations. S. C. Gordon.
160 The Druggist and the Prohibitory Law. C. B. Sylvester.
161 Report of Cases Treated at the Maine Eye and Ear Infirmary. E. E. Brown.

The Canada Lancet, Toronto.

March.

162 Expert Medical Testimony. Joseph E. McDougall.
163 Some Further Results in the Treatment of Pulmonary Tuberculosis. J. H. Elliott.
164 Vomiting of Pregnancy. John Hunter.
165 The Action of X-Rays on Diseased Structures. A. Groves.
166 A Résumé of the Recent Pathology of Insanity. F. E. Lawlor.
167 Some Indications for Treatment in the Mentally Diseased. J. A. Mackenzie.

Texas Medical News, Austin.

February.

168 Pneumonia and Its Treatment. A. G. Krueger.
169 Catarrhal Pneumonia. C. S. Lane.
170 Treatment of Pneumonia. J. L. Short.
171 Diphtheria. W. R. Hazlewood.

Colorado Medical Journal, Denver.

December, 1902.

172 The Scientific Aspect of Modern Medicine. Frederick S. Lee.
173 Address, Colorado School of Medicine. Luman M. Giffin.
173½ Chronic Gastric Catarrh. A. E. Engzelius.

Medical Bulletin, Philadelphia.

February.

174 A Case of Tubercular Leprosy, with Lepra Bacilli in the Circulating Blood. John V. Shoemaker.
175 The Lepra Bacillus in the Circulating Blood. L. Napoleon Boston.
176 Some Notes on the Bacillus Lepræ. Joseph McFarland.
177 Observations upon Leprosy Occurring in Japan, Iceland and Norway. Judson Daland.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Presse Medicale, Paris.

1 (No. 7.) L'enseignement (instruction) dermatologique à Paris. L. Brocq. Thirteen portraits.
2 *Recherches nouvelles sur la "sécrétine." Action sur le foie. E. Henriquez and L. Hallion.
3 Traitement de l'iritis. R. Romme.
4 (No. 8.) Nosologie générale des atrophies musculaires progressives. F. Raymond.
5 Importance de la lécithine dans les fonctions de la capsule surrénale et sa sécrétion par cet organe. L. Bernard, Bigart and H. Labbé.
6 (No. 9.) Les origines de l'histologie. P. E. Launois.
7 *L'éphidrose dans la paralysie générale. E. M. de Monty[illegible].
8 (No. 10.) *Sections multiples des nerfs craniens. Debove.
9 La phlébalgie chez les convalescents de phlébite, les varqueux et les névropathes. H. Hannequin.
10 *La myorrhaphie des levatores ani dans le traitement du prolapsus du rectum. C. Lenormant.
11 L'alcool en thérapeutique. A. Martinet.
12 (No. 11.) The Old Hospital at Tonnerre, Dating from 1293. H. Chaput. Un hôpital d'autrefois. Illustrated.
13 Le vulgaire tube à drainage pour fixer les sondes à demeure (permanent catheters), boucher les anus contre nature (plug artificial anus) et servir de canule à trachéotomie. P. Stoianoff.
14 (No. 12.) L'argent colloidal (collargol) et ses indications thérapeutiques. Netter and Salomon. See THE JOURNAL of March 7, p. 679.
15 Les injections de biiodure de mercure en solution aqueuse dans le traitement de la syphilis. E. Emery and M. Druelle.
16 (No. 13.) De certaines arythmies cardiaques en rapport avec (in relation to) les données nouvelles (new data) en physiologie. H. Vaquez.
17 Du traitement chirurgicale de l'ethmoidite purulente. J. Guisez.
18 La radiographie stéréoscopique des calculs urinaires. A. Béclère.
19 (No. 14.) *Diagnostic de la valeur fonctionelle des reins au point de vue chirurgical. Tuffier and Mauté.
20 *Un nouveau syndrome bulbaire. P. Bonnier.
21 *Mobilisation des deux bouts de l'urèthre (of two ends of urethra) pour remédier à une perte de substance (loss of substance) de ce conduit. M. Savariaud.

2. Action of Secretine on Liver.—Secretine is the fluid obtained by acid maceration of the mucosa of the duodenum of a fasting mammal. It exerts a remarkable influence on the secretion of pancreatic juice when injected into other animals. The present article combats the notion that this action is specific for the pancreatic juice, as the writers' experiences demonstrated that it had a similar and possibly even more pronounced action on the secretion of bile.

7. Hyperidrosis in General Paralysis.—The particulars of 54 cases of general paralysis are given, followed from the incipiency of the affection to death. Hyperidrosis was marked in one out of every 9 male patients. It was never observed in syphilitics or hard drinkers and never after the age of 50. It was twice as frequent in winter as in summer, and was never noted in spring or fall. It was always excessive from the start and ceased with equal suddenness, lasting two months on an average, occasionally five. It was always noticed in the second stage of the affection, but there did not seem to be any relation between it and the other symptoms. It recurred later in one instance, but was limited to the brow.

8. Results of Multiple Sections of Cranial Nerves.—On account of a malignant tumor in the neck, the pneumogastric, hypoglossal and sympathetic nerves were cut in the case described. The patient has hemiparalysis and hemiatrophy of the tongue as the result of section of the hypoglossal. Section of the sympathetic has induced slight atrophy of that side of the face, but there is no paralysis. The eyeball is more sunken than normal, probably from paralysis of the tract of fibers in the capsule of Tenon, innervated from the sympathetic. Protrusion of the eyeball is probably due to some permanent irritation of these fibers, while section of the sympathetic induces the opposite effect. The palpebral fissure is wider than normal, and myosis is also marked owing to the lack of the antagonist action of the fibers innervated by the sympathetic. Section of the pneumogastric has caused paralysis of the vocal cord on that side, but no other symptom. The extirpation of the neoplasm required ligation of the carotid which did not cause any disturbance at the time, but complete hemiplegia gradually developed after twenty-four hours on the opposite side, with aphasia, and then gradually subsided to merely traces. Five months later an epileptiform seizure occurred, leaving transient hemiplegia. There were no antecedents of hysteria or epilepsy, and the seizure was evidently a tardy consequence of the ligature applied to the carotid.

10. Myorrhaphy of Levatores Ani for Prolapse of Rectum.—This procedure has been applied as a means of correcting prolapse of the uterus but the two cases reported are the first published in which prolapse of the rectum was treated in this way. A Russian surgeon suggested the method at the Moscow Congress but had practiced only on the cadaver. The first patient was a woman of 40, and the second a man of 65. The prolapse has not recurred in either. The muscles were exposed to the peritoneum, isolated and sutured together by the

inner surfaces or edges. In the female the intervention accomplishes both a myorrhaphy and vaginopexy at the same time.

19. **Functional Tests of the Kidneys.**—Tuffier remarks that the freezing-point, methylene blue, phloridzin and other functional tests of the kidney afford insight into the conditions of only a portion of the total urine for twenty-four hours, while it has always been considered extremely important to base all calculations on the total output. He has been studying the conditions in one of his patients who voided all the urine from one kidney through a lumbar fistula while that from the sound kidney was voided naturally through the bladder. He gives the details which establish beyond question that in this case at least, the proportions between the functional conditions of the two kidneys as determined by all the functional tests known, remained approximately the same at all times. Each kidney performed its share of the urinary task in the same proportion for each half hour as during the entire twenty-four hours. One kidney was affected with hydronephrosis, with slight sclerosis, while the other was sound, and the diseased organ did only half the work of the other. Study of this case confirms the value of the information to be derived from segregation of the urine from each kidney, even for brief, half-hour periods.

20. **A New Bulbar Syndrome.**—Bonnier shows how injury of the large bulbar nucleus, which he calls the nucleus of Deiters, may entail a syndrome distinguished by vertigo, with partial or complete loss of ability to stand, reflex oculomotor disturbances, a condition of nausea and distress, transient auditory phenomena and pains in certain regions of the trigeminal domain. The nucleus is large and may not be affected throughout its entire extent, consequently the complete syndrome is rarer than the partial. He compares these bulbo-protuberantial centers to the small keyboard of an organ. A slight touch to one of its keys sends vast waves of sound sweeping through its periphery, reverberating farther and farther. The symptomatology harmonizes into a coherent and progressive harmony which we can trace back to the bulbar notes played. The syndrome under discussion associates cerebellar phenomena with the reactions peculiar to the third, fourth, fifth, sixth, eighth, ninth and tenth cranial nerves, but the nucleus involved is predominantly a center for the labyrinth. In 97 out of 100 cases of tabes examined by Collet this nucleus was found affected.

21. **Mobilization of Urethra to Remedy Loss of Substance.**—Savariaud has followed the method of mobilization of the two stumps of the urethra suggested by Carl Beck and von Hacker, to unite them after extensive injury or resection of the canal. He describes a case in which he performed this operation with satisfactory results on a boy of 8. The conditions are more favorable for success in a traumatic case than in hypospadias for which the method was originally suggested, owing to the tendency to curvature and to the rudimentary condition of the urethra in the latter.

Revue de Chirurgie, Paris.

22 (XXIII, 2.) Note sur 2 cas de kystes mucoïdes du cou (of the neck) à epithélium cilié dérivés des restes du tractus thyréo-glosse. P. Fredet and M. Chevassu.
23 *Pharyngotomie pour ablation des tumeurs de la portion buccale du pharynx. L. V. Orlow.
24 *Un cas d'anastomose artério-veineuse longitudinale pour artérite oblitérante. Gallois and Pinatelle (Jaboulay's clinic).

23. **Pharyngotomy.**—Orlow points out that tumors developing in the upper, middle or lower portion of the pharynx require entirely different surgical intervention. About a dozen separate methods of treating those in the middle or buccal portion have been devised, but Orlow prefers his modification of Krönlein's method. The semicircular incision instead of starting at the juncture of the lips, commences at the middle of the lower lip, thus averting all danger of injury of the facial nerve. Among the advantages offered by this method is the wide opening up of the field of operation, allowing free access to the tumor and complete oversight of the upper end of the larynx, while it enables the ganglia in the region and extending down into the neck to be readily extirpated. Section of the lower jaw is indispensable in all these operations. A still further advantage is the lesser disfigurement that results from the semicircular incision in the shadow of the jaw, visible only as a symmetrical line on the chin. For benign growths free from glandular involvement, the Trendelenburg method is preferable, but for malignant tumors the method above described is superior to all others, he believes. In 8 of the 10 cases described the patients were in the horizontal decubitus. In case of extensive malignant growths preliminary ligation of the external carotid is required, and in particularly serious cases, also of the internal carotid. One of his patients succumbed to hemorrhage from the external carotid the eleventh day, from an erosion induced by infection of the wound. The other patients bore the operation well, and there were no evidences of broncho-pneumonia afterward. The age of the patients ranged from 36 to 62 years. The tumor was an endothelioma in 2 cases, in one of them shaped like an hour-glass; carcinoma in 3 and sarcoma in 4. It is impossible to maintain asepsis in this region, and the union of the jaw was not always regular. There have been recurrences in 3 and a suspicion of them in 2, but not in the cases of endothelioma. In 1 case the ultimate outcome is unknown. All the patients were in an advanced stage of the affection; the results will be better when intervention can be undertaken during an earlier phase.

24. **Arterio-Venous Anastomosis.**—This article describes the post-mortem findings in the case of arteritis obliterans mentioned in THE JOURNAL of February 7, p. 408. The first manifestations are sharp pains in the legs, exceptionally also in the arms, occurring in an adult free from syphilis or other infectious disease. The pain is mostly continuous with exacerbations. Then gangrene develops, limited at first to the toes it gradually encroaches on the leg with a slow and progressive course, usually without effusion. The arterial pulse vanishes far in advance of the gangrene. It is frequently almost impossible to find the arteries as there is no pulse, and they can not be palpated as hard cords as in arteriosclerosis. The arteries elsewhere are small and the pulse is weaker than normal. The leg was amputated at the thigh in the case described. The obliterating lesion consists in a thickening of the inner coat of the arteries, with connective tissue transformation reducing and finally occluding the lumen of the vessel. The process is usually confined to the medium-sized arteries, and is sometimes accompanied by endophlebitis, but the nerves have always been found sound. Courchet collected 13 cases with atheroma or endophlebitis in some, but no known dyscrasia, no infection. Twenty-one other cases have been published in the literature. Some of the patients were apparently cured by amputation, but as the cases were not followed the final termination is not known. Jaboulay's is the third operation on record in which an anastomosis was established between an artery and vein. The opening was found still permeable at the autopsy and the union was complete between the tissues of the two vessels. In the first case published the pains of the dry, spontaneous gangrene to the ankle vanished after anastomosis between the artery and vein had been established. But they recurred later and amputation was performed. In the second case the patient was a man of 72 with traumatic gangrene of three toes. The anastomosis was done at the same time as the toes were disarticulated. The gangrene was arrested and the patient recovered. These cases are described in full by the operator, San Martin y Satrustegui of Madrid in a pamphlet published by E. Teodoro, Madrid, 1902, entitled "Discurso leido en la solemne sesione inaugural en la Real Academia de Medicina, 1902." In all these three cases on man longitudinal anastomosis was established between the femoral artery and vein.

Semaine Medicale, Paris.

25 (XXIII, 4.) *Pathogénie péritonitique de la colique hépatique et des crises douloureuses épigastriques. R. Tripier and J. Pavlot.
26 Letter from America. La diphthérie à Boston et à Philadelphie. F. Munch.
27 (No. 6.) *Pseudo-Heart Disease. E. Barié.—Les faux cardiaques.
28 Letter from America. Le traitement de l'appendicite en Amérique. F. Munch.
29 Traitement des plaies (wounds) infectées par l'acide phénique associé au camphre. V. Chlumsky.
30 Benefit of Lemons in Treatment of Dropsy. N. T. Tchigaieff.—Le citron comme antihydropique.

31 (No. 7.) Action of Suprarenal Extract. R. Lépine.—Sur l'action de l'extrait de capsules surrénales.
32 Letter from America. La douleur rénale provoquée dans le diagnostic, etc. F. Munch. (Kelly's method.)
33 Ibid. Le traitement des tumeurs malignes à New York.

25. **Peritonitic Origin of Liver Colic, Etc.**—Tripier's further experience has confirmed more and more the assumption which he has long been proclaiming in regard to appendicitis, that the pain in affections of the abdominal viscera is due solely to inflammatory processes in the surrounding peritoneum. He formulates the law that none of these affections are accompanied by attacks of pain unless the surrounding peritoneum is involved in some acute or subacute inflammatory process, and that the pain is more intense the smaller the quantity of the fluid exudate. The same law applies to all the serous membranes, the pleuræ, pericardium, etc. Certain pains manifestly due to a flare-up of peritonitis, when it is situated near the liver, may deceptively simulate liver colic. Perigastritis due to a prepyloric ulcer in one case was diagnosed as liver colic without icterus, and the patient took several courses at Vichy until the progressive character of the trouble compelled a laparotomy. In three-fourths of all the cadavers that came to autopsy there were evidences of healed subhepatic peritonitis with adhesions, and the gall-bladder showed signs of old inflammation in the majority of cases, the symptoms of which had generally passed unrecognized during life. Some contained a calculus and others no sign of lithiasis. Instead of the general tendency to incriminate the appendix and to regard other concomitant abdominal lesions as secondary to inflammation at this point, the autopsy findings in Tripier's researches indicate that the gall-bladder is generally responsible, and that the appendicitis is itself secondary. There can be no question that many cases of mild or subacute inflammation of the gall-bladder are overlooked in the clinic and yet they may be the starting-point for a neighborhood peritonitis and infections in the rest of the abdomen, near or remote, especially in the vicinity of the appendix and organs in the small pelvis, more rarely by contiguity in the pleuræ and pericardium. Instead of an "appendicular pleurisy," the facts observed in the cadavers examined speak for the reverse, a descending instead of an ascending infection. The adhesions left from these mild inflammations of the peritoneum around the gall-bladder have evidently been mistaken for physiologic anomalies in many cases. When noticed as pathologic no one seems to have thought of comparing them with the pathologic past of the subject. In looking for them the viscera must be examined *in situ* to note the relations and adhesions between them instead of taking them out singly for examination.

27. **Pseudo-Heart Disease.**—Barié describes four groups of what he calls "false cardiacs." They are usually adults or youths, all either dyspeptics, smokers, neuropaths or victims of incipient tuberculosis. Notwithstanding their palpitations, their pains in the heart region and other symptoms, the heart will be found sound. In the dyspeptics some irritation from the lining of the stomach is transmitted by the sympathetic and induces a reflex excitation of the capillaries of the lung, causing spasmodic contraction. This raises the pressure in the pulmonary artery system; the right heart becomes dilated and tricuspid insufficiency results. Experience has shown that this reflex action occurs exclusively with trivial digestive disturbances and is never observed in serious conditions. The same syndrome may also result from a small calculus in the biliary passages. This pseudo-heart disease is most frequent in neuro-arthritics. It is sometimes the initial manifestation of incipient tuberculosis. In this case the palpitations may be accompanied by tachycardia, or the latter may occur alone and may precede by six months or a year any appreciable symptoms on the part of the lungs. The heart symptoms may be due to a dyspeptic condition very common in incipient tuberculosis, or to compression by some glandular involvement or to actual tubercular involvement of the heart. There is also a symptomatic bradycardia observed in incipient tuberculosis, but it is very rare. The diagnosis in these tuberculous cases is difficult as the subject attributes his symptoms to heart disease. An aid in differentiation is the arterial pressure which is almost invariably low in uncomplicated incipient tuberculosis, and the phosphaturia, which is also common at this stage. Radioscopy may likewise reveal a lesser transparency of the apex of the lung, as well as the deficient excursion of the diaphragm on the side affected. The potassium iodid test proposed by Striker may also prove useful in the differentiation, and serum diagnosis. Barié also describes the attacks of pseudo-angina pectoris, and the pseudo-heart disease noticed at the time of puberty in girls and at the menopause as also in certain affections of the uterus and adnexa, in gout, diabetes, etc.

Centralblatt f. Gynaekologie, Leipsic.

34 (No. 6.) Die Drainage nach Laparotomie. A. Sippel.—Advocates rinsing with salt solution and draining.
35 Abortion by Silver Cauterization of Cervix. Piering.—Geschichtliche Bemerkung.
36 Ruptura cervicis centralis anterior sub abortu. O. Weiss.
37 Fall von Prolapsus uteri inversi. E. Funke.
38 Eine Modifikation des Hegar'schen Nadelhalters (needle holder). G. Burckhard.
39 (No. 7.) Ein einfacher (simple) Hysterophor und eine Bandage gegen Hängebauch (pendulous belly) und Prolaps. O. Piering.
40 *Zur Technik der Füllung des Kolpeurynter. A. Kurrer.
41 Trokarkornzange (combination of trocar and dressing forceps). L. Fraenkel.
42 Ueber ein modificiertes französiches (French) Dekapitations-Instrument. P. Bong.
43 (No. 8.) Für die Drainage. M. Hofmeier.
44 Indiziert eine Uterus-Ruptur den Kaiserschnitt (Cesarean section) bei wieder eintretender Schwangerschaft (by recurring pregnancy)? H. W. Freund.
45 Zur Kasuistik der Verkalkung (calcification) des Ovariums. J. Miländer.

40. **Filling the Colpeurynter.**—Kurrer attaches the colpeurynter to a fountain syringe, holding about a quart, hung two yards above the bed. The colpeurynter thus automatically fills itself as allowed by the contractions of the cervix.

Muenchener Med. Wochenschrift, Munich.

46 (L, 6.) *Ueber chirurgische Intervention bei Speiseröhrenverengerung (esophageal stricture). H. Lindner.
47 Centrale Aktinomykose des Unterkiefers (lower jaw). Von Bruns.
48 Fall von infantiler Pseudobulbarparalyse. F. Kaufmann.
49 Die Soxhletsche Nährzucker (sugar food) in der Ernährungs-Therapie kranker Säuglinge (in diet treatment of sick infants). O. Rommel.
50 Die Behandlung der Geburt bei engem Becken (treatment of childbirth with contracted pelvis) in der Privat-Praxis. A. Mueller.
51 Zur Frage der Häufigkeit (frequency) und Etiologie der Tubar-Gravidität. W. Hahn.
52 Ueber die Bestimmung der Schmerzempfindlichkeit (sensibility to pain) der Haut (of skin) mit dem Algesimeter. R. von Hoesslin.
53 Ueber eine Pipette zur Blutkörperchenzählung (pipette for automatic blood count) mit automatischer Einstellung. R. May (Munich).
54 *Aseptic Dressings for Immediate Use. G. Perthes.—Gebrauchsfertige aseptische Verbandstoffe für die Kriegschirurgie und für die chir. Thätigkeit des praktischen Arztes.
55 Fall von Kohlenoxydgasvergiftung (intoxication with carbonic acid gas). K. Wolf.
56 Ileus infolge (in consequence of) Thrombose der Vena mesenterica. A. Reitzenstein.
57 Atropin-Behandlung eines Falles von Darm-Paralyse mit Ileus-Erscheinungen im Verlaufe einer Meningo-myelitis luetica. A. Homburger.
58 (No. 7.) Hysterische Tachypnoe bei organischen Herzerkrankungen (heart affections). H. Curschmann. Two traumatic cases.
59 Neue Platfusseinlagen (flat-foot insole) aus Celluloid-Stahldraht (wire). F. Lange.
60 Fall von Bläserlahmung (wind instrument paralysis). E. Stadler.
61 Ueber eine Conjunctivitis-Schul-Epidemie nebst einigen allgemeinen Bemerkungen über ärztliche Anordnungen (medical instructions) bei Schul- (school) Epidemien. H. Zia.
62 Zur Aetiologie des Schulterblatthochstandes (elevation of scapula). O. Bender.
63 Zur Kasuistik der familiären amaurotischen Idiotie. C. Gessner.
64 Fall von traumatischer Hysterie unter psychischer Behandlung rasch in Heilung übergehend. R. Treugott.
65 Tritt Placenta previa auch ohne Blutung auf (without hemorrhage)? Burger.
66 *Die streikenden Geraer Kassen-Aerzte und der Vorstand des Leipziger wirtschaftlichen Verbandes (the Battle of the Clubs at Gera). Hartmann.

46. **Surgical Treatment of Stricture of the Esophagus.**—Lindner's experience has been no better with carcinomatous stricture than that of others. About 18 cases have been published; the patients died shortly after the operation in 5, but the remainder survived for a longer or shorter time, none for more than two years. He has operated on 3 but none survived more than a few days. He has used Frank's method of making a gastric fistula in 15 cases of benign stenosis of the esophagus

and the results for the first two or three months were ideal, but after this the fistula became incontinent and the patients wasted away. He has now abandoned it altogether. He has been very successful with von Hacker's method of "endless sounding," and has found that very few cases prove rebellious to it. In one recently, a boy of 7, the multiple strictures caused by drinking lye, proved impermeable to the sounds, and as a last resort the esophagus was exposed its entire length in the neck, and from this point the sound was finally successfully passed into the stomach and the strictures dilated. The stomach fistula healed in a week, and a week later the sound could be introduced from the mouth. The wound in the neck was simply coaptated with plaster. The lad was trained to keep up this endless sounding to prevent the stricture from closing up again. He soon learned to introduce the sound himself and was dismissed in good condition.

54. **Always Ready Aseptic Dressing for Wounds.**—The dressings are rolled up separately in an aseptic cover. Two strips of parchment are placed in each in such a way that by pulling on the parchment the dressings can be opened and spread out ready for application, without being touched by the hand. The cut shows how this is accomplished.

66. **The Strike at Gera.**—This article is by the president of the Union for the Protection of the Economic Interests of the Physicians of Germany, which has been sustaining the physicians at Gera in their resignation of their positions as medical officers to the great textile industries sick benefit company. He reviews the history of the battle of the clubs in Germany and extols the action of the Gera physicians as a brilliant example for the entire profession by their united stand for ethical principles and their brave perseverance in the course once decided on. He remarks that it is the first time in Germany that physicians have taken such a decided step as to refuse to attend the policy holders in the company, even as private patients. The responsibility for the conditions rests with the officers of the company and with the local authorities which have a right to compel the company to provide the medical attendance its charter calls for. Indirectly it rests on the policy holders, as they elect the officers and they should select men incapable of injustice. In regard to the lack of sympathy on the part of the general public, he remarks: "Since when have physicians ever received any sympathy from the public in their claims? Have the decisions of our medical chambers ever met with public sympathy? The stand of the profession in regard to the charlatan question raised a great hue and cry in the lay press in regard to our short-sighted and narrow-minded policy. Have we ever won any friends by our stand in regard to medical women, the technical schools, etc.? Any one who claims his rights may count on the hostility of the multitude, and we physicians will have to accustom ourselves to accomplish our just purposes in spite of the ill-will not only of the general public but also of the public authorities."

Bolletino della Soc. de Ost. e Gin., Florence.

67 (I, 8-9.) Two Cases of Extramedian Symphysiotomy. Pestalozza.—Due casi di taglio lateralizzato del pube.
68 Ibid. One Case. Scarlini.—Il primo caso di taglio lat. del pube nella Clinica di Siena.
69 Ibid. One Case. Saladino.—Il secondo caso di taglio lat., etc.
70 Endotelioma del collo dell' utero. Cova.
71 Isterectomia per corionepitelioma. Santi.
72 Case of Acute, Fatal, Yellow Atrophy of Liver in Second Day of Puerperium. Mascagni.—Un caso di atrofia giallo acuta del fegato in 2 giorno di puerperio.

Gazzetta degli Ospedali, Milan.

73 (No. 8.) *Psicopathie coreiche e significato etiogenico. S. Mircoli.
74 Contributo allo studio della gangrena nel corso della febbre tifoide. A. Lorenzoni. One fatal case.
75 Caso di mola idatiforme associata a degenerazione cistica delle ovaie (ovary). G. Monzarde.
76 Toracentesi e vescicante (and blisters). V. Luzzatti.
77 Vescica artificiale ovvero drenaggio a permanenza per lo svuotamente dei versamenti sierosi (continuous drainage of serous effusions). B. Giovanni.
78 *Sull' impiego del calomelano nella cura della polmonite (calomel in pneumonia). C. Bertazzoli.
79 Dispragia intermittente angiosclerotica ed embolismo della poplitea. N. Introna.
80 No. 11.) *Serum Treatment of Leukemia. L. Lucatello and C. Malon (Padua).—Di un siero leucolitico antileucemico.
81 Cairol in oculistica, B. U. Arturo.
82 *Jez's Extract Treatment of Typhoid. M. Subaldi.—Breve cenni sull' estratto Jez nella terapia dell' ileo tifo.
83 Raccolte (accumulations) endotoraciche pulsanti. E. Maragliano.
84 (No. 14.) Le coree dai moderni punta di vista. S. Mircoli.
85 *Le manifestazioni cutanee da malaria. A. Vaccari.
86 Successful Use of Antidiphtheria Serum in Case of Cachectic Aphthous Fever. Del Monaco-Concezio.
87 *Novello contributo alla cura delle anemie colle iniezioni ipodermiche di soluzioni di arseniato di ferro. N. Fedeli.
88 Pleurite essudativa epidemica. A. Muratori. Six cases.

73. **Choreic Psychopathy.**—Mircoli describes a few typical cases to illustrate his idea that the various forms of chorea, if accompanied by mental disturbances or change of character, have each a special type of psychopathy. The degenerative form of chorea is accompanied by psychic disturbances such as are noted in degeneracy from any cause, hereditary or acquired. The rheumatic form is accompanied by caprices and a tendency to agitation. In the psycho-traumatic variety the mental phenomena observed are those of depression with a tendency to melancholia. It may be possible sometimes to trace back to the cause of the chorea by observing the character of the psychopathy accompanying it.

78. **Calomel in Pneumonia.**—Bertazzoli has long been proclaiming that calomel in infectious diseases is able to lower the temperature to a degree that amounts to a pseudo-crisis. It causes revulsion in the intestines, he asserts, diverting part of the blood from the inflamed organs and in pneumonia thus averting the danger of edema of the lungs, while regulating the circulation there. The calomel passages carry away from the organism a quantity of the toxins which otherwise would circulate in the blood and depress the nervous system, adding their dangerous effect to the intoxication with carbonic acid gas, so intense in this disease. The microbicidal action of calomel supplements its effect in other ways.

80. **Serum Treatment of Leukemia.**—Rabbits and sheep were inoculated with leucocytes derived from patients with leukemia. The blood withdrawn was set aside to settle spontaneously which allowed the leucocytes to be collected free from red corpuscles or serum. The rabbits thus received forty-seven endoperitoneal injections of 5 to 10 gm. of leucocytes in the course of thirty to forty-five days. The sheep received nine injections in the external jugular vein at intervals of two to twelve days. The serum of the animals thus treated displayed *in vitro* marked destructive action on human leucocytes, and 3 patients with leukemia were treated with it by subcutaneous injections of about 1 to 5 c.c. of this serum, usually on alternate days. One patient with 560,190 leucocytes before treatment, received twenty-six injections and the leucocytes then numbered 375,720 per mm. The enlarged spleen was also much reduced in size during the serum treatment. The second patient was in a very advanced stage of the disease and no benefit was apparent from the twenty-eight injections made. In the third case the leucocytes fell only by 7,660 from the original figure of 500,960 after eleven injections, a total of 42 c.c. of serum in thirteen days. The proportion of uric acid in the urine rose from .70 to .95 and the size of the spleen was very much reduced. The injections caused no by-effects in any instance and were perfectly tolerated.

82. **Jez's Extract in Treatment of Typhoid.**—The extract is made from the organs of animals injected two or three days before with typhoid bacilli. Sibaldi was much impressed with the rapid improvement that followed its use in two exceptionally severe cases of typhoid fever. As much as 200 c.c. can be injected without disturbances. The heart and pulse are favorably affected, as also the nervous symptoms. It induces copious urination and the temperature subsides. The extract is given by the spoonful every two hours. Its effect is manifest by the second day and by the third day two liters of urine were voided. In a third case the extract was given in hopes to abort or cure a prostatic abscess in the course of typhoid fever, but no appreciable benefit was derived. The patient succumbed.

85. **Cutaneous Manifestations of Malaria.**—Vaccari has observed a few cases of a dermatosis resembling urticaria, but free from pruritus, which accompanied attacks of malaria and vanished under exhibition of quinin. Other Italians have

reported an exanthem resembling that of scarlet fever or measles, with desquamation, occurring likewise associated with or as a manifestation of malarial infection. Vaccari observes that these cutaneous phenomena in malaria indicate a severe type of the disease, and thus have a certain value for the prognosis.

87. **Ferric Arseniate in Anemia.**—The soluble ferric arseniate used in Italy has been applied by Fedeli in twenty cases of anemia with exceptionally favorable results, as he shows by the clinical histories. The age of the patients ranged from 10 to 38. Zambeletti's citro-ammoniacal preparation was administered by subcutaneous injection for two or three months and all the patients gained several pounds in weight, while the composition of the blood and the general health returned to normal.

Riforma Medica, Palermo.

89 (Nos. 190-1.) Sopra un tumore ovarico di genesi dal corpo luteo. A. Michelazzi.
90 (Nos. 192-3.) Osservazioni sul potere (power) isoagglutinanti ed isolitico di sieri di sangue umani (of human blood serum). C. Bezzola.
91 (No. 194.) Appunti sulla malaria del mezzogiorno (malaria at midday) d'Italia. F. Martirano.
92 (Nos. 195-6.) Cranial Asymmetry as Studied in 434 Skulls. V. Nistino.—La plagiocefalea.
93 (Nos. 197-200.) Bullet Wound of Spine and Lumbar Enlargement—Instantaneous Paraplegia—Complete Recovery After Extraction of Bullet. A. Virdia.—Ferita d'arma da fuoco della colonna vertebrale e del rigonfiamento lombare, etc.
94 (No. 201.) Cerebellum Traversed by Pitchfork—Double Craniectomy—Recovery. A. Ghedini.—Craniectomia doppia per ferita del cervello.
95 (No. 202.) *Sulla formazione dei tossoidi (of toxoids) nelle coltore di bacillo del tetano. A. Bonome.
96 (Nos. 203-206.) *Degenerazioni chronici del miocardio en rapporto collo aritmie (in relation to arrhythmia). B. Francesco.
97 (No. 207.) Great Benefits from Lime in 14 Cases of Epilepsy. A. Bonelli.—Azioni del calcio negli eppilettici.
98 (No. 208.) Glicosuria e levulosuria alimentare nelle malattie del fegato (in liver affections). L. Ferrannini.—See abstract in JOURNAL of January 31, p. 343.
99 (No. 209.) *La saccaromicetolisis. F. Sanfelice.
100 (No. 210.) Carcinoma medullare primitivo del polmone (of lung). A. Pitini and F. Mercadante.
101 (Nos. 211-12.) Diabete insipido trasformatosi poscia in mellito e ipertrofia della prostata. G. P. Morano.

95. **Toxoids in Tetanus Cultures.**—Bonome announces that he found it possible to attenuate the tetanus toxin in cultures by addition of coli toxins.

96. **Arrhythmia in Relation to Chronic Degeneration of Myocardium.**—Francesco's experience indicates that arrhythmia is invariably pronounced when the musculature of the auricle is in a condition of fibrous degeneration, with or without the involvement of the musculature of the ventricle in the process. On the other hand, degeneration of the auricular appendage, even with advanced degeneration of the walls of the ventricle, is not accompanied by any arrhythmia.

99. **Saccharomycetolysis.**—Sanfelice states that the serum of animals treated with the proteins of blastomycetes contained antibodies which transformed the parasites into fuchsinophile bodies.

Medizinskoe Obozryenie, Moscow.

102 (Nos. 13-14.) *K etiologii ostrykh voskhodyashtchikh paralitchei (acute ascending paralysis). Staphylococcemia. V. Muraveff and V. Turutin.
103 Ryedkii slutchai traumatitcheskova paralysis alternans. A. A. Byelsky and I. T. Kaplan.
104 *O symptomatologii pri zlokatchestvennykh novoobrazovaniyakh plevry (malignant neoplasms in pleura). L. E. Golubinin.
105 *Review of Works on Diagnosis, Pathology and Therapy of Lungs and Pleura During 1901. Kotovshtchikoff.
106 *O lyetchenii Sydenham'ovoi chorei myshyakom (with arsenic). S. M. Timasheff.
107 (No. 15.) *Two Cases of Bullet Wounds of Skull. P. Tikhoff.—K kasuistikye ognestryelnykh povrezhdenii tcherepa.
108 *Restoration of Nasal Septum. P. I. Kuzmin.—Novye sposob vozstanovleniya razrushennoi nosovoi peregorodki.
109 *O lichen planus slizistykh obolotchek (of mucous membranes). M. A. Tchlenoff.
110 *Tuberculous Stricture of Intestine. A. V. Nikolsky.—O tub. suzhenii kishek.
111 Shto takoe sarcome angioplastique Malassez i Monod? G. V. Vlasoff.

102. **Etiology of Acute Ascending Paralysis.**—A man of 55, with no special antecedents except a family tendency to excessive hemorrhages from slight cuts, noticed slight fever and delirium, with pains and weakness in the legs and round red spots on the thighs, extending later over the body. Urination was difficult. By the eighth day the right arm became completely paralyzed, and later the left, and lesions developed in the buccal cavity. Except for the first few days the patient's mind was clear during the entire affection, which progressed to a fatal termination, with symptoms of edema of the lungs, ten days after entering the hospital and twenty-seven after the first manifestations of the trouble. Examination of the blood the twenty-second day revealed large numbers of the staphylococcus albus. Thoinot and Masselin have reported experimental research on rabbits, in which they induced paralysis by inoculation with the staphylococcus aureus. Strümpell was able to cultivate the staphylococcus from a case of acute transverse myelitis and pachymeningitis. Eisenlohr also found this micro-organism in the central nervous system in a case of Landry's paralysis, as also Wokenius in a case of multiple neuritis (St. albus). Sukhanoff has also published a case of multiple neuritis and abscesses in the skin and internal organs due to staphylococci, accompanied by melancholia and Korsakoff's psychosis. Dogliotti also derived staphylococci from the pus of an abscess in the medulla oblongata. In the case described in the present article the probabilities are in favor of the assumption that the acute ascending paralysis was the consequence of general infection with the staphylococcus albus, and that both the spinal cord and the peripheral nerves were affected, the former predominantly. Both cutaneous and tendon reflexes were abolished, and the paralysis was most marked in the upper extremities. The blood was examined again immediately after death, but this time the results were negative. The germs may, therefore, vanish from the blood during the course of staphylococcemia, which explains the rarity of its discovery.

104. **Differentiation of Malignant Tumors in Pleura.**—Golubinin relates in detail a case to illustrate the various points important for the diagnosis, the pain, the pleuritis, usually with effusion, but distinguished by the absence of fever. The effusion is seldom serous or purulent, more frequently it is hemorrhagic, sometimes chylous. It is not as abundant nor as diffuse as in case of ordinary pleuritis. The sputa become blood stained if the growth involves the lungs. The side of the thorax is also liable to become contracted from development of cicatricial tissue within. The most important signs are the rapidly developing anemia and cachexia, the presence of particles of the tumor in the pleural effusion and the discovery of enlarged glands and metastatic nodules in the skin and subcutaneous tissue, the protracted, non-febrile course, the irregular outline of the dullness and occasionally the severe pains.

105. **Review of Literature on Lungs and Pleura in 1901.**—Nearly a hundred pages are devoted to this review of 685 communications published in all quarters of the globe. American literature is extensively represented.

106. **Treatment of Sydenham's Chorea with Arsenic.**—Timasheff describes his experience with 26 cases of chorea. He found that an aqueous 1 per 1000 solution of arsenious acid afforded the best results. He deprecates the large doses recommended by Comby, and seldom gave more than three teaspoonfuls a day, finding that the desired results were attained fully as rapidly as with the larger doses. He thinks that more attention should be paid to the underlying cause of the affection. He was unable to detect any special relations between the duration of the disease and the length of treatment or the prevention of relapses.

107. **Bullet Wounds of Skull.**—Tikhoff describes two cases to support his plea of the necessity of trephining as a routine measure in bullet wounds of the skull, and the harm that may result from neglect of this measure.

108. **Restoration of Nasal Septum.**—Kuzmin makes two parallel incisions in the upper lip close to the median line, but not reaching to the extreme outer margin. A transverse incision close to the nose allows a rectangular flap to be raised, still connected at its base in the margin of the lip. The flap is then sutured to the nose in such a way as to give the aspect of the normal septum. After eight to ten days the flap is severed completely from the lip and the suturing to the

nose completed. The edges of the wound in the lip are brought together and sutured. The cosmetic effect is very satisfactory.

109. **Lichen Planus of Mucous Membranes.**—In Tchlenoff's case the patient exhibited typical lichen planus on face and neck, and the same lesions were also prominent in the mouth. He reviews the similar cases on record and observes that lichen planus has been noticed on the mucosa of mouth, throat, anus and urethra. It may develop at these points primarily and without appearing on the skin, but is usually secondary to cutaneous manifestations. The prognosis is generally favorable, especially under prolonged and energetic administration of arsenic.

110. **Tuberculous Stricture of Intestine.**—Nikolsky has been studying the records of 150 cases of tuberculous stenosis of the intestines, as published in the literature. They can be grouped as those with an acute sudden onset, those with a gradual development and those with a latent course. It is secondary in about 50 per cent. of all cases, and usually manifests itself between 20 and 40 years of age. Before 10 and after 60 it is extremely rare, although three cases are known before 9 and one case after 60. The stricture generally develops in the lower part of the ileum. Multiple strictures occur nearly as frequently as the single, and multiple strictures prove almost invariably to be of a tuberculous nature, as also all strictures whose etiology is not clear. Treatment is exclusively surgical, the sooner the better. The mortality after resection was 30 per cent., and after enteroanastomosis 17 per. cent.

Russki Vratch, St. Petersburg.

112 (I, No. 34.) Experimental Data in Regard to Tuberculosis of Joints and Trauma. N. N. Petroff.—Exp. dannya po voprosu bugortchakye sustavov v svyazi s povrezhdeniyami.
113 (No. 35.) K patologii Fallopi'evykh Trub. I. M. Lvoff.
114 Influence of Atropin and Eserin on Blood Supply in Head. A. M. Kalinin.—O vliyanii atropina i physostigmina na krovosnabzhenie golovy.
115 Critical Analysis of Pawlow's Theory in Regard to Digestion. L. B. Popelsky.—O tzyelecoobraznosti v rabotye podzheludotchnoi i zheludotchnykh zhelez.
116 *Treatment of Tetanus with Brain Emulsion. I. E. Tikanadze. K lyetcheni stolbnyaka vpryskivaniyami mozgovoi emulsii.
117 (Nos. 36-37.) Werlhof's Disease. S. V. Levashoff.—O raslytchnykh formakh W. bolyezni.
118 *Cutaneous Hyperalgesia in Relation to Affections of Internal Organs. B. Y. Gebstein.—O hyperalgesiakh kozhi i svyazi ikh s zabol. organov.
119 *O professionalnoi pollutzie i spermatorrheye. N. A. Bogoraz. (Commenced in No. 34.)
120 Influence of Artificial Light on Consciousness and Working Capacity. R. A. Katz.—O vliyanie iskusstbennova osvyeshtchniya na samotchubstvie i rabotosposobnost.
121 Malaria and Mosquitoes. V. V. Favre.—O zavisimosti mezhdu bolotnoiu likhoradkoi i komarami anopheles.
122 Conservative Treatment of Cord. V. A. Petroff.—Uproshtchennii sposob perevyazki i ukhoda za pupovinoi.
123 Clinical Study of Appendicitis. O. E. Hagen-Torn.—Nyekotorya klin. Yavleniya i ikh znatchenie pri appendicitye.
124 (No. 38.) Zamyetka o school-hygien. Photometrye. T. T. Petrushevsky.
125 1 Slutchai vrozhdennoi bronchiectasia u bolnova s situs inversus viscerum. A. K. Slewert.
126 *Treatment of Acute Pyemia. J. Wernitz.—K lyetcheniu ostrykh gnilostnykh zabolyevanii.
127 Profeta's Law. M. A. Tchlenoff.—O t. naz. "zakonye Profeta." (Commenced in No. 37.)
128 *K voprosu o lyetchenii Varioly usilennoi (repeated) vaccinatziei. P. I. Braslavsky.
129 (No. 39.) Serum Treatment of Cattle Plague. A. A. Yurgelunas.—O syvorototchnom lyetchenii sibirskoi yazvy.
130 Regulations in Regard to Lepers in Russia. K. K. Dehio.—Po povodu novyeishikh postanovlenii o prizryenii prokazhennykh v Rossii.
131 (No. 40.) *Reviving the Heart After Death. A. A. Kuliabko.—Novie opyty ozhivleniya serdtza. Ozhivlenie tchelovyetcheskova serdtza.
132 Effect of Resection of Liver on Gaseous Interchanges in Animals. Y. Y. Postoeff.—Resectio petcheni i vliyanie yevo na gazoobmyen u zhevotnykh.
133 (No. 41.) *Primary Tuberculosis of Spleen. T. I. Romanoff.—Pervitchnaya bugortchatka selezenki.
134 *New Method of Reviving in Case of Asphyxie Neonatorum. G. K. Minkevitch.—Novyi sposob ozhivlenie pri asphyxia neonatorum.
135 Ulcus Pharyngis Supposed Malarial. P. K. Haller.—Malarlinaya yazva glotki.

116. **Treatment of Tetanus With Brain Emulsion.**—Tikanadze reviews the four cases of tetanus treated with brain substance on the principle of "side chain immunity," which have been published by Krokiewicz, Schramon, Schuster and Rostovtzeff. All the patients recovered, and he describes a case personally observed in which the recovery was also rapid and complete. After the failure of chloral and other measures in a severe case of tetanus in a girl of 11, he commenced on the eighth day to treat her with brain emulsion. He obtained the head of a freshly slaughtered young pig and removed the brain and ground it in a sterilized porcelain mortar with sterilized physiologic salt solution, until a reddish fluid was obtained, which passed readily through the medium sized tip of the syringe. He thus injected subcutaneously 10 gm. of brain substance emulsified in 30 c.c. of the salt solution. Improvement was apparent by the next day. He repeated the injection again the next and the following days, and recovery was satisfactory. He adds his appeal to Rostovtzeff's that physicians should not fail to use the brain emulsion in cases of tetanus, especially when tetanus antitoxin is not obtainable.

118. **Cutaneous Hyperalgesia in Affections of Internal Organs.**—Gebstein urges further research in this line, as it may clear up the diagnosis in many dubious cases if the laws governing it can be determined. He describes and illustrates a dozen typical cases to show the variety in the location of the hyperalgesia. The region affected was sometimes, but by no means invariably, a girdle or zone, and it did not always correspond with Head's outlines. He found that hyperalgesia occurred regularly in certain regions, with an affection of any of the internal organs, but it was not an invariable accompaniment of an internal affection. The hyperalgesia observed in his cases always vanished on recovery from the internal affection.

119. **Professional Pollutions and Spermatorrhea.**—Bogoraz has examined hundreds of railway employes, and has found that pollutions and spermatorrhea are very common among them. Engineers are especial sufferers. The nervous strain of their profession and the constant jar of the engine causing friction between the sexual organs and the clothing, with the venous congestion in the lower part of the trunk and legs, cause constipation and frequent pollutions and spermatorrhea. He gives tables showing the comparative proportion affected among the various groups of railroad employes. He adds that they attribute the exaggeration of this pathogenic tendency to the introduction of the "American" system of long trips and sleeping on the cars.

126. **Treatment of Acute Pyemia.**—Wernitz gives the temperature curve and details of two severe cases of septic puerperal infection rapidly cured after application of the almost continuous rectal irrigation, which he described also in another article, of which an abstract was given in THE JOURNAL of March 14, p. 745.

128. **Treatment of Smallpox with Repeated Vaccinations.**—V. O. Hubert published in Russia, in 1886, an account of remarkably favorable results obtained by him in more than 200 cases of smallpox which he had treated by repeated vaccination, vaccinating the patients two or three times a day during the first six days of the disease. All recovered. Other Russian writers have published similarly favorable reports on a smaller scale, and Braslavsky now adds eight more cases to the list. The results were eminently good, although half of his cases were severe. He considers himself justified in recommending the method for wider adoption in the treatment of "natural" smallpox.

131. **Revival of Isolated Heart After Death.**—Kuliabko has continued his researches previously reported on the possibility of reviving and inducing spontaneous pulsation in the heart of warm-blooded animals two to four, and even five days after death of the animal. He announces that he has succeeded in accomplishing the same in the case of the heart of a three-months infant on the second day after the death of the child from pneumonia. A canula is inserted in the aorta, as suggested by Langendorff, and warm Locke's solution, saturated with oxygen, is forced through the heart. This is a solution of equal parts of $CaCl_2$, KCl and $NaHCO_3$, each .02 per cent.; NaCl, .9 per cent., and dextrose .1 per cent. After this fluid had coursed through the heart for about twenty minutes, almost imperceptible movements were noticed in the right auricle, spreading thence to the right ventricle, whereupon the entire heart commenced to beat. This spontaneous pulsation of the

heart continued for more than an hour. The more or less faintly rhythmical pulsation of the ventricles and aurieles under the influence of artificial irrigation with the above fluid was a wierd sight, knowing that the owner of the heart had been dead thirty hours. It remains to be seen whether the facts thus learned will prove of any practical value, but they certainly suggest, he remarks, the possibility that, in exceptional cases, artificial irrigation of the heart with a warm salt solution might possibly be attempted as the very last resort.

133. **Primary Tuberculosis of Spleen.**—Romanoff's patient was a man of 80. It is the tenth case that has been published, he states. The lesion was of the "spleno-hepatic" type, described by Collet and Gallavardin. When admitted to the hospital (Tomsk), a few days before his death, the spleen formed a large tumor. He stated that he had been healthy except for a period of five months forty years previously, when he had expectorated blood and had more or less fever. The microscopic findings are described in full.

134. **Resuscitation in Asphyxia Neonatorum.**—Minkevitch seats the child on a flat surface and bends the trunk backward over a solid roll of cloth, which elevates the thorax while allowing the head to touch the flat surface of the table beyond. The trunk is then brought up and carried forward until the head is between the infant's knees. A few repetitions of the procedure are usually sufficient.

British Medical Journal, London.

February 28.

136 *Some Cases Simulating Acute Appendicitis. Arthur E. Barker.
137 *Pathology and Symptoms of Adenocarcinoma of the Rectum. Charles B. Ball.
138 Case of Dilatation of the Pylorus for Simple Stricture. Horatio P. Symonds.
139 A Simple Method of Operating on Piles. A. B. Mitchell.
140 Note on Intestinal Anastomosis: Special Forceps. T. Carwardine.
141 *The Presence of Diphtheria Bacilli in Atrophic Rhinitis. J. Odery Syms.
142 *The Bilberry. James Sawyer.
143 Case of Ruptured Urinary Bladder: Operation and Recovery. Hugh Lawrie.
144 *The Open-Air Treatment of Syphilis. E. H. Douty.

136. **Simulation of Appendicitis.**—Barker reports his experience with conditions simulating appendicitis among which are ruptured pyosalpinx, strangulated ovarian cyst with twisted pedicle, strangulated omentum, perforated gastric ulcer, retrocecal hernia, broken down caseating glands, ileocecal cancer with abscess, hematoma of broad ligament, reduction of hernia *en masse* and intussusception. Some of these are rare, while others such as ruptured pyosalpinx, broken down caseating glands, etc., are much more common. Intussusception ought never to be mistaken for appendicitis, yet it is. In some other conditions like gastric ulcer, the diagnosis may be very difficult.

137. **Adenocarcinoma of the Rectum.**—In this second lecture, Ball describes adenocarcinoma, which, while not exclusively the type of malignant disease occurring in this region, is still by far the predominant one. Hardly 5 per cent. of malignant growths there situated are of any other variety. It is met more frequently after middle age, but many cases are recorded in which it commenced in early life and he has seen it at the ages of 16 and 18 respectively. Both sexes appear to be affected alike. When met in young persons it is apt to be highly malignant and rapid in its course. He describes two forms, one commencing as a flat tubercle, ending in a sort of oval ulcer, spreading over the circumference of the bowel. The other, a slower type occurring in older persons without the exuberant edges, is a growth less in quantity and more atrophic, with a tendency to dense connective tissue formation around the ulcerated surface. The morbid histology is described at length and illustrated. The symptoms are, first, diarrhea, a good deal of mucus, etc., and later symptoms of obstruction and pain. Involvement of the other organs may occur if it progresses. He insists on the importance of an early diagnosis and of digital examination to detect the condition. This can be performed, if necessary, under anesthesia by the bimanual method. If the tumor is freely movable and no enlarged glands or metastatic growths can be felt, and the general condition of the patient is good, it is suitable for operation. If there is limited adhesion or lymphatic involvement, operation may be undertaken, but the prognosis is not so good, but if there is an extensive involvement of the adjoining organs and metastatic growths can be detected in the abdomen, operation is absolutely contraindicated.

141. **The Diphtheria Bacillus in Atrophic Rhinitis.**—Syms has investigated twenty-three cases of atrophic rhinitis for the diphtheria bacillus and found an organism closely resembling it in twenty of the cases. Control examinations were made on healthy noses, and in no instance was a similar microbe found. Culture experiments in one or two cases also proved the pathogenicity of the organism. There were certain slight differences observed, the bacillus was more curved and thinner and more highly metachromatic than the Klebs-Loeffler bacillus and rather closely resembled the tubercle bacillus. He offers the following conclusions:

If the foregoing facts can be sustained, and the identity of this bacillus with the Klebs-Loeffler bacillus can be established, then we may regard atrophic rhinitis as a chronic form of nasal diphtheria. In addition to the bacteriologic evidence the following points may be considered in support of this theory:

1. In diphtheria the accessory sinuses of the nose are constantly infected. Bacilli may remain in the sinuses for prolonged periods, exciting a purulent, sero-purulent, or serous discharge.

2. Chronic suppuration in the accessory sinuses is, in the opinion of many eminent rhinologists, the direct exciting cause of the conditions of ozena and atrophic rhinitis.

3. Multiple cases of atrophic rhinitis in the same household occur from time to time, as one would expect if the process were a true infection. Thus Terez records twelve instances in which there were two or more sufferers in the same family. This is a point I have not inquired into amongst my own series of cases.

4. An attack of diphtheria may be the starting point of atropaic rhinitis. Only two patients in the present series dated the onset of symptoms from an attack of diphtheria, but the history of all was not inquired into.

5. Atrophic rhinitis, like diphtheria, attacks females more than males; it is a disease of early life, and induces a pronounced anemia and leucocytosis.

6. Atrophic rhinitis has been successfully treated by diphtheria antitoxin. With regard to this point, my experience has been so limited that I do not feel justified in saying more than that if repeated moderate doses of antitoxin are administered regularly, amounting in all to 20,000 units, marked relief of symptoms results.

7. In atrophic rhinitis the type of diphtheria bacillus does not alter during the progress of the case, a fact which Woodhead has recently found to hold true in acute faucial or nasal diphtheria.

He says, apart from the theory that atrophic rhinitis is the chronic form of nasal diphtheria, a practical point is that cultures taken from these noses may cause isolation of patients

142. **The Bilberry.**—Sawyer notices the bilberry communication in a previously issued abstract in THE JOURNAL of February 28, ¶19, p, 610, and suggests further investigation of the subject.

144.—This article has appeared elsewhere. See THE JOURNAL of February 14, ¶18, p. 469.

The Lancet, London.

February 28.

145 Some Famous Medical Officers of the Army. Norman Moore.
146 *Gastroenterostomy and Its Uses, with a Description of the Operation as Performed by the Author. A. W. Mayo Robson.
147 Lunacy and the Lay. T. Outterson Wood.
148 *The Gelatin Treatment of Hemoptysis. H. M. Tickell.
149 *The Uses of X-Rays in Ophthalmic Surgery. M. S. Mayou.
150 *The Treatment of Epileptics. Fletcher Beach.
151 The Theory of Retinoscopy. E. Kenneth Campbell.
152 A New Method of Treating Fractures of the Shaft of the Femur. J. P. Lockhart Mummery.

146. **Gastroenterostomy.**—Robson reviews the methods and indications of this operation. He prefers the posterior operation, which is favored by his experience. The later results of operation have been much more favorable than the former. While only three or four years ago, from what he was enabled to collect from all sources, there was a mortality of 36.4 per cent., now he can point to a considerable series of cases with a mortality of only 5 per cent. He is not in favor of the Murphy button for this operation, though it is used almost exclusively by some German surgeons. He would employ it only when the greatest speed was imperative. Complications such as regurgitant vomiting, subsequent contraction of the new orifice, pneumonia or pleurisy, peptic ulcer, adhesions, causing intestinal obstruction, lack of union, passing of the small intestine through the loop, etc., are all noted. He gives a long series of conditions which indicate this operation:

Pyloric stenosis, from either simple or malignant disease, congenital forms, congenital pyloric atresia, chronic gastric ulcer, with doubtful tumor too extensive for removal, not necessarily associated with stenosis, duodenal cancer or tumor causing obstruction, and hour-glass stomach are indications for gastroenterostomy. In perigastritis, adhesions around the pyloric, causing obstructive symptoms, may be too extensive for gastroenterostomy. Dilatation of the stomach, depending on pressure outside the pylorus from inoperable tumor of the pancreas, liver, or gall bladder are imperative indications, as soon as the diagnosis is established. In the second series, cases in which it is indicated after failure of medical treatment, are included acute or chronic gastric ulcer, duodenal ulcer, hemorrhage from such ulcer, persistent spasm of the pylorus, or Reichmann's disease with gastric dilatation, hyperchlorhydria, persistent gastralgia, tetany of gastric origin, acute gastric dilatation not yielding to lavage and general treatment, pancreatitis secondary to gastric ulcer, certain cases of jaundice depending on gastric or duodenal ulcer, leading to thickening around the common bile duct and simple atonic dilatation of the stomach after failure of lavage and general treatment. In some of these cases operation is advisable simply to obtain physiologic rest and favor natural processes. The operation is here only a last resort when everything else has failed.

148. **The Gelatin Treatment of Hemoptysis.**—Tickell recommends the use of gelatin by the rectum in cases of hemoptysis, and reports a case. Since then he has applied the same method to other patients with the same favorable results. The solution is prepared as follows: 50 grams of gelatin are dissolved in one and one-quarter liters of boiling water and boiled very gently for an hour, when the volume is reduced by evaporation to one liter. This solution is then cooled down to body temperature, and one-quarter liter is slowly passed into the rectum from an ordinary irrigator at a height of two or three feet. The injection does not cause any action of the bowels, is entirely painless, and there is no danger of infection if properly managed, no rise of temperature and, of course, no necrosis. The treatment can be carried out in general practice. He would give it three times a day, until the sputum ceases to show any trace of blood.

149. **The X-Rays in Ocular Surgery.**—Mayou points out the uses of the *x*-rays in the location of metallic foreign bodies in the globe and gives a method of employing them. He also recommends them for rodent ulcer of the eyelid and trachoma. In the latter condition he does not use a mask, but just seats the patient about nine inches from the anode, with a moderately soft tube and a current of six amperes for a two minutes' exposure on four to six successive days, according to the case. If there is much injection, or the case is very acute, four will be sufficient. Later he employs it two or three times a week and has had excellent results.

150. **Epilepsy.**—Beach believes in the bromids for the drug treatment of epilepsy, and prefers the compound of bromid of sodium, ammonium and potassium. If only one is required he gives the bromid of ammonium, and, in some cases, has found the combination of antipyrin with bromid useful, giving it in doses of 10 gr. three times daily for adults and in a lesser quantity for children. Where the fits occur at night, he gives a double dose at bedtime and, if they are frequent, a single large dose only at that time. If they come in the early morning, he gives the dose before the patient rises and has him remain in bed an hour after taking it. He has not great faith in chlorid reduction in these cases, but would give tonics, such as cod liver oil, and keep the bowels well open and occasionally a high saline rectal douche should be given.

Journal of Tropical Medicine, London.

February 16.

153 Notes on Case of Omunono (Yaws). A. Yale Massey.
154 *Beri-Beri in Queensland. Edward B. Ormerod.
155 Malaria and Malignant Diseases in Hot Climates. James Cantlie.

154. **Beri-Beri in Queensland.**—Ormerod describes the conditions of life of the Queensland bushman, whose diet consists mainly of flour, salt meats, sometimes condiments and tea with every meal and between them. The water is very bad, and is often infected by dead animals, etc. Artesian wells are being introduced, which contain more or less magnesia, sometimes causing slight urethritis and general purging at first. Another source of infection is in the dust storms which occur. Rainwater is also used considerably. He has not met any cases of peripheral neuritis or beri-beri in those who only drank rainwater from tanks.

Indian Medical Gazette, Calcutta.

February.

156 *An Analysis of One Thousand Consecutive Cataract Extractions. (To be continued.) F. P. Maynard.
157 *Neurasthenia in Anglo-Indians. E. F. Gordon Tucker.
158 Notes on the Origin of the Presidency General Hospital, Calcutta. (Continued.) D. M. Moir.
159 *Note on the Bacteriology of Dysentery and the Value of the Serum Test in Its Differentiation. Leonard Rogers.
160 Glioma of the Retina. B. H. Nanavatty.

156. **Cataract Extractions.**—One thousand cases are here analyzed, including the 300 published in 1901. Maynard describes his methods of examination and his results, which were good in 89 per cent., indifferent in 5.7 per cent., and bad in 4.5 per cent. and unknown in eight cases. What he calls good is vision ranging from 6.36 to 6.6 with correcting glasses; indifferent results where the sight was bad, but sufficient to enable the patient to move about alone, and bad results where the sight was lost. He finds a family history in nearly 24 per cent. of his cases. The more intelligent the patient the more likely is the family history to be forthcoming. Of the other associated diseases, diabetes occurred in six cases, and the patients all did well. Fourteen patients had bronchitis and various other disorders occurred, but it does not appear that they affected the success of the operation very much.

157. **Neurasthenia in Anglo-Indians.**—Tucker recognizes two forms of neurasthenia, in men that from hepatic insufficiency, and in women a uterine derangement type, both of which are described at length, and the post-febrile group, which may occur in either sex. He thinks early and judicious treatment will prove successful in most cases. Many patients are allowed to go to the bad from neglect. The constant taking of alcoholic stimulants in small quantities to keep up brain energy is a very bad practice in male cases, as it accentuates the dangerous condition of the digestive organs. The patient's life should be carefully regulated, alcohol abstained from entirely or restricted to meals, amount of tobacco reduced, diet regulated, the use of Carlsbad salts in the early morning for a laxative, the teeth should be looked after, mild exercise taken once or twice a day to excite the action of the skin, but drafts should be carefully avoided after it and a flannel cholera belt should be worn at night, especially in the hot weather. Cold baths are injurious and should be prohibited. If the digestion is sluggish, a bitter, acid or some drug that will promote the functions of the intestinal canal is important, but the most important thing is mental rest. The patient should be told that he is suffering from no organic disease and should give up responsibilities. In women many cases are due to subinvolution, which is very largely overlooked, and the patients treated for anemia, dyspepsia, etc. The responsibilities of housekeeping and the care of the children should be removed. The patients should be advised to lay up for four weeks, passing the day on a couch and local treatment given for the uterus, hot vaginal douches in the horizontal position, massage of the limbs, etc.

159. **Dysentery.**—Rogers finds that in the cases which he has studied the organism resembles the Shiga bacillus. His observations point to the conclusion that the common form of India dysentery, prevalent in jails and other institutions, and not followed by the large tropical liver abscess, are produced by the Shiga bacillus or one very like it and can be differentiated from the much rarer and usually complicated cases of amebic dysentery by the positive serum reactions with the Shiga bacillus. His findings agree very closely with those of Flexner in this country.

New Patents.

Patents of interest to physicians, February 17 and 24:

720783. Antiseptic attachment for telephone mouthpieces. Charles W. Clough, Watsonville, Cal.
721032. Electromedical belt. Frank Farmer, Richmond, Ind.
720918. Disinfectant distributing device. Samuel Hesketh, Auckland, New Zealand.
720812. Vaccination shield. Robert W. Johnson, New Brunswick, N. J.
720599. X-Ray tracer. Friedrich Moritz, Munich, Germany.
720863. Atomizer. Jacob Waldman, New York.
720865. Pneumatic massage apparatus. Robert Watson, Washington, D. C.
720648. Syringe. Edward B. Wilder, St. Louis.
12084. Re-issue, Composition for disinfecting or other purposes. Henry S. Blackmore, Mount Vernon, N. Y.
721162. Hemostatic bandage. Eduard E. Denain, Paris, France.
721185. Apparatus for administering anesthetics. Wm. A. Heckard, Indianapolis.
721574. Ankle-supporting corset-shoe. John J. Lattermann, New York.
721575. Maternity corset. Mary E. Leighton, New York.
721587. Operating table. Charles Lyons, Columbus, Ohio.
721454. Prescription file. John H. Lytle, Delphi, Ind.
721603. Truss. Henry T. Prange, Kalamazoo, Mich.
721489. Making citrate soluble phosphates. Wilhelm Wolters, Magdeburg-Buckau, Germany.

The Public Service.

Army Changes.

Movements of officers of the Medical Department U. S. Army, under orders from the Adjutant General's office, Washington, D. C., from Feb. 21 to 28, 1903:

Ames, Roger P., contract surgeon, U. S. A., now at New Orleans, will proceed to Fort St. Philip, La., and report in person to the commanding officer of that post for duty and by letter to the commanding general, Department of the East, to relieve Contract Surgeon Oliver H. Buford, U. S. A., who, on being thus relieved, will proceed to his home, Cartersville, Ga., and, on arrival, report by letter to the Surgeon-General of the Army for annulment of contract.

Mason, Charles F., major and surgeon, having complied with the requirements of Paragraph 1, Special Orders No. 26, Feb. 12, 1903, Department of Texas, will proceed not later than Feb. 28, 1903, to rejoin his proper station.

McAndrew, Patrick H., first lieutenant and asst.-surgeon, having reported his arrival at San Francisco, in compliance with orders heretofore issued, will proceed to Jefferson Barracks, Mo., and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Department of the Missouri.

Tweedie, H. V., contract surgeon, U. S. A., is granted leave of absence for one month.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending March 7:

Surgeon C. Biddle, detached from the Naval Hospital, Philadelphia, and ordered to the Navy Yard, League Island.

Surgeon E. S. Bogert, detached from the Recruiting Rendezvous, Buffalo, and ordered to the Philadelphia Naval Hospital.

Surgeon J. C. Byrnes, detached from Navy Yard, New York, ordered home and granted three months' sick leave.

Surgeon O. Diehl, detached from Navy Yard, League Island, and ordered to the *Oregon*, sailing from San Francisco, March 19.

P. A. Surgeon F. C. Cook, detached from Naval Hospital, Newport, R. I., and ordered to the *Nevada*.

P. A. Surgeon R. C. Holcomb, detached from the Naval Hospital, New York, and ordered to the Naval Hospital, Newport, R. I.

Asst.-Surgeon F. W. S. Dean, ordered to the Naval Hospital, New York.

Asst.-Surgeon R. L. Sutton, ordered to the Naval Hospital, Washington, D. C.

A. A. Surgeon J. B. Mears, ordered to the Naval Recruiting Station, Buffalo, N. Y.

Asst.-Surgeon C. E. Riggs, ordered to the Naval Hospital, Philadelphia.

P. A. Surgeon R. T. Orvis, detached from the *Michigan*, and ordered to duty with Marine Detachment at Culebra.

A. A. Surgeon T. G. Foster, ordered to the *Michigan*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended March 5, 1903:

Surgeon H. R. Carter, to proceed to Morgantown, W. Va., for special temporary duty.

Surgeon G. M. Guiteras, to report at Washington, D. C., for special temporary duty, February 28. To proceed to Eagle Pass, Texas, for special temporary duty, March 2.

A. A. Surgeon C. P. Wertenbaker, to proceed to El Paso, Texas, for special temporary duty.

P. A. Surgeon M. J. Rosenau, detailed to represent Service at meeting of Special Committee on Diphtheria Antitoxin at Philadelphia.

P. A. Surgeon J. H. Oakley, granted leave of absence for seven days from March 1, 1903.

Asst.-Surgeon C. E. Decker, granted fourteen days' extension of leave of absence on account of sickness from Feb. 20, 1903.

Asst.-Surgeon L. L. Lumsden, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Los Angeles, Cal., and Phœnix, Ariz., for special temporary duty.

Asst.-Surgeon J. W. Kerr, directed to assume temporary command of the Service at New Orleans, Feb. 28, 1903.

Pharmacist R. H. Gibson, granted leave of absence for seven days under the provisions of Paragraph 190 of the Regulations.

BOARDS CONVENED.

Board convened at Washington, D. C., March 2, for the physical re-examination of Chief Engineer Geo. Maher, Revenue Cutter Service. Detail for the Board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General H. D. Geddings, recorder.

Board convened at Boston, March 9, for the physical re-examination of Lieut. B. H. Camden, Revenue Cutter Service. Detail for the Board: Surgeon R. M. Woodward, chairman; Asst.-Surgeon W. C. Rucker, recorder.

PROMOTIONS.

Asst.-Surgeon R. H. von Ezdorf, commissioned as passed asst.-surgeon, to rank as such from March 4.

Asst.-Surgeon J. F. Anderson, commissioned as passed asst.-surgeon, to rank as such from March 18.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 7, 1903:

SMALLPOX—UNITED STATES.

California: Berkeley, Feb. 18-25, 1 case; Los Angeles, Feb. 14-21, 3 cases; Sacramento, Jan. 25-Feb. 7, 4 cases; San Francisco, Feb. 15-22, 12 cases, 1 death.

Colorado: Denver, Feb. 7-21, 30 cases.

District of Columbia: Washington, Feb. 14-28, 6 cases, 1 death.

Illinois: Chicago, Feb. 21-28, 17 cases, 1 death.

Indiana: Elwood, Feb. 22-March 1, 3 cases; Evansville, Feb. 21-28, 4 cases; Indianapolis, Feb. 14-28, 57 cases, 16 deaths; Jeffersonville, Jan. 1-31, 1 case; Jeffersonville, Feb. 1-28, 5 cases.

Iowa: Davenport, Feb. 21-28, 4 cases.

Kansas: Douglas County, Jan. 1-31, 2 imported cases; Wichita, Feb. 21-28, 1 case, 1 death.

Kentucky: Lexington, Feb. 21-28, 1 case; Newport, Feb. 21-28, 1 case.

Louisiana: New Orleans, Feb. 21-28, 2 imported cases.

Maine: Biddeford, Feb. 21-28, 3 cases.

Massachusetts: Boston, Feb. 21-28, 2 cases; New Bedford, Feb. 21-28, 1 case; Newton, Feb. 21-28, 1 case.

Michigan: Grand Rapids, Feb. 21-28, 14 cases; Marquette, Feb. 21-28, 1 case; Menominee, Feb. 14-21, 1 case; Port Huron, Feb. 21-28, 5 cases.

Nebraska: Omaha, Feb. 21-28, 3 cases.

New Jersey: Camden, Feb. 21-28, 5 cases; Jersey City, Feb. 22-March 1, 3 cases.

New York: Buffalo, Feb. 21-28, 1 case; New York, Feb. 21-28, 4 cases; Yonkers, Feb. 20-27, 1 case.

Ohio: Cincinnati, Feb. 20-27, 11 cases, 1 death; Cleveland, Feb. 21-28, 7 cases, 2 deaths; Dayton, Feb. 21-28, 1 case; Hamilton, Feb. 21-28, 2 cases.

Pennsylvania: Altoona, Feb. 21-28, 6 cases imported; Dunmore, Feb. 21-28, 3 cases; Erie, Feb. 21-28, 5 cases; Johnstown, Feb. 21-28, 3 cases; McKeesport, Feb. 21-28, 2 cases; Norristown, Feb. 21-28, 1 case; Philadelphia, Feb. 21-28, 37 cases, 1 death; Pittsburg, Feb. 21-28, 19 cases, 6 deaths, 4 cases imported; Pottsville, Feb. 21-28, 4 cases.

South Carolina: Charleston, Feb. 21-28, 7 cases.

Tennessee: Johnson City, Feb. 21-28, 7 cases; Memphis, Feb. 21-28, 5 cases.

Utah: Salt Lake City, Feb. 14-28, 39 cases, 1 case imported.

Wisconsin: Green Bay, Feb. 22-March 1, 1 case; Milwaukee, Feb. 14-28, 11 cases.

SMALLPOX—FOREIGN.

Barbadoes: Jan. 31-Feb. 13, 9 cases, 1 death.

Belgium: Antwerp, Jan. 31-Feb. 7, 2 cases; Brussels, Jan. 31-Feb. 7, 6 deaths.

Canada: Winnipeg, Feb. 7-14, 1 case.

Canary Islands: Las Palmas, Jan. 24-Feb. 7, 69 cases, 2 deaths.

Ecuador: Guayaquil, Jan. 31-Feb. 7, 1 death.

France: Marseilles, Jan. 1-31, 37 deaths; Paris, Feb. 7-14, 1 death.

Great Britain: Birmingham, Feb. 7-14, 16 cases; Dublin, Feb. 7-14, 4 cases; Glasgow, Feb. 13-20, 1 case; Leeds, Feb. 7-14, 16 cases, 1 death; Leith, Jan. 31-Feb. 7, 1 case; Liverpool, Feb. 7-14, 6 deaths; London, Feb. 7-14, 1 case, 1 death; Nottingham, Feb. 7-14, 2 cases.

India: Bombay, Jan. 27-Feb. 3, 28 deaths; Calcutta, Jan. 24-31, 1 death.

Italy: Palermo, Jan. 31-Feb. 14, 11 cases.

Jamaica: Duan Vale, Feb. 1, present.

Japan: Kagawa Ken, Jan. 29, present; Yamaguchi Ken, Jan. 29, present.

Mexico: City of Mexico, Feb. 8-15, 6 cases, 2 deaths.

Netherlands: Amsterdam, Feb. 7-14, 3 cases.

Russia: Moscow, Jan. 24-Feb. 7, 9 cases, 3 deaths; Odessa, Jan. 18-25, 5 cases; St. Petersburg, Jan. 31-Feb. 7, 29 cases, 9 deaths; Warsaw, Jan. 31-Feb. 7, 1 death.

Turkey: Smyrna, Jan. 25-Feb. 1, 1 death.

YELLOW FEVER.

Colombia: Cartagena, Feb. 9-15, 2 deaths; Panama, Feb. 11-18, 2 cases.

Ecuador: Guayaquil, Jan. 31-Feb. 7, 21 deaths.

Cuba: Havana, Feb. 14-21, 1 case, 1 death, imported from steamship Esperanza from Progreso.

Mexico: Coatzacoalcos, Feb. 7-14, 1 case, 1 death.

CHOLERA.

India: Calcutta, Jan. 24-31, 53 cases.

PLAGUE—FOREIGN.

India: Bombay, Jan. 27-Feb. 3, 551 deaths; Calcutta, Jan. 24-31, 97 deaths; Karachi, Jan. 25-Feb. 1, 26 cases, 19 deaths.

Mexico: Mazatlan, Jan. 24-Feb. 7, 89 cases, 53 deaths.